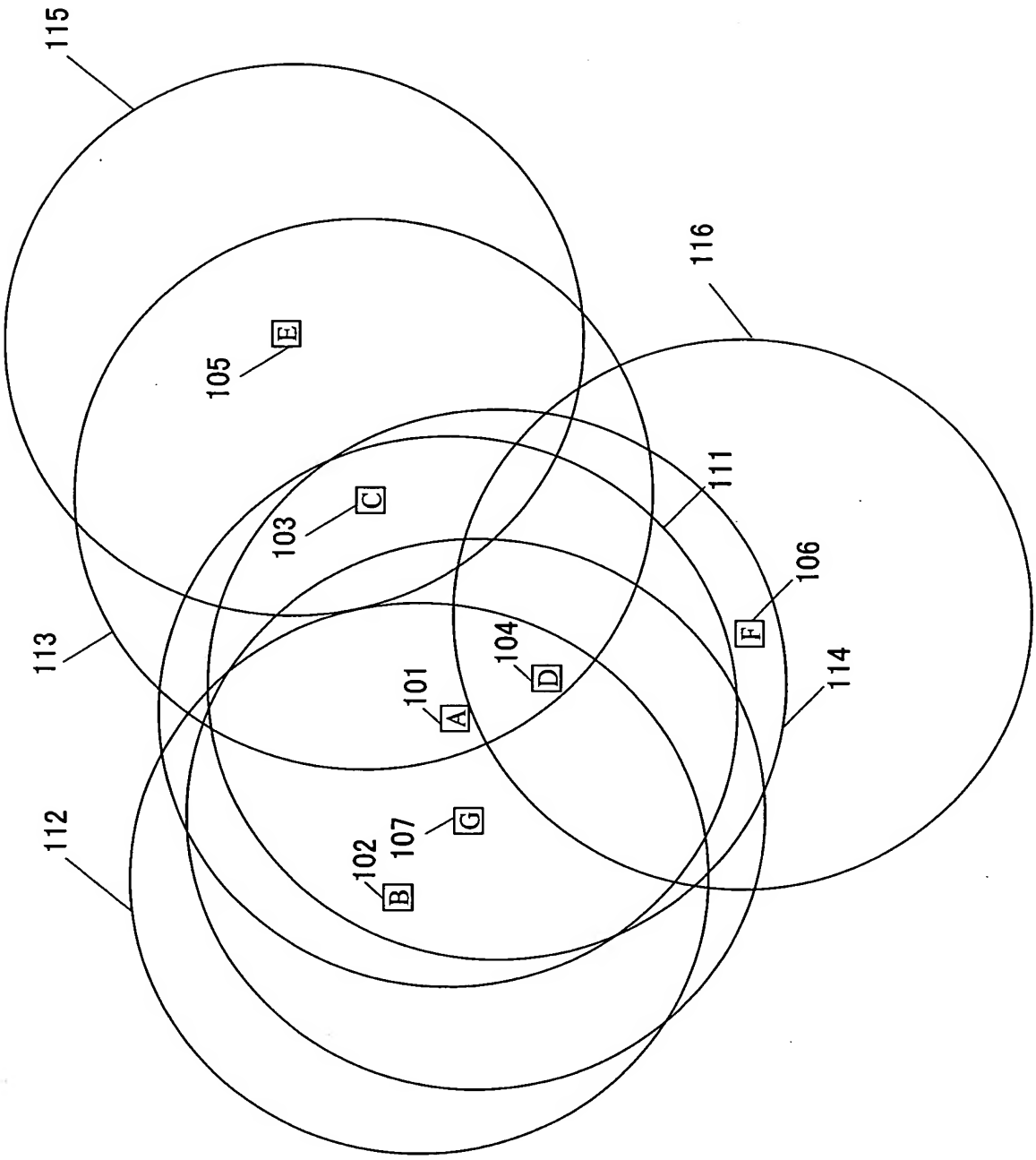


Fig.1

Fig.2

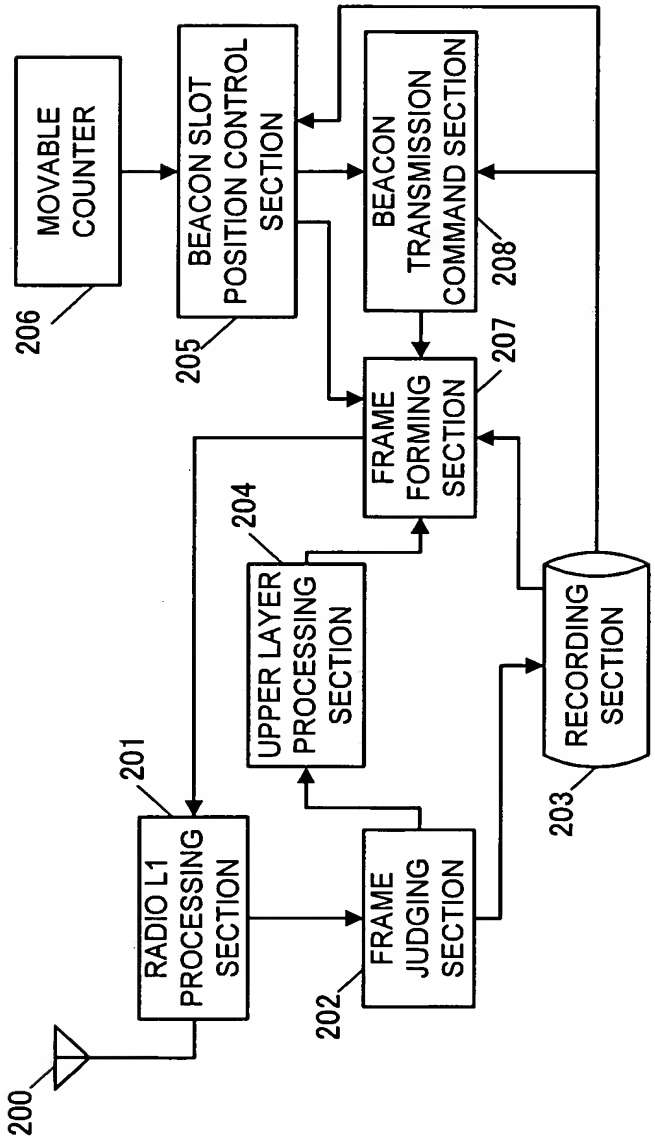

MOVABLE COUNTER
206
BEACON SLOT POSITION CONTROL SECTION
205
BEACON TRANSMISSION COMMAND SECTION
208
FRAME FORMING SECTION
207
204
UPPER LAYER PROCESSING SECTION
RECORDING SECTION
203
201
RADIO L1 PROCESSING SECTION
FRAME JUDGING SECTION
202
200

Fig.3

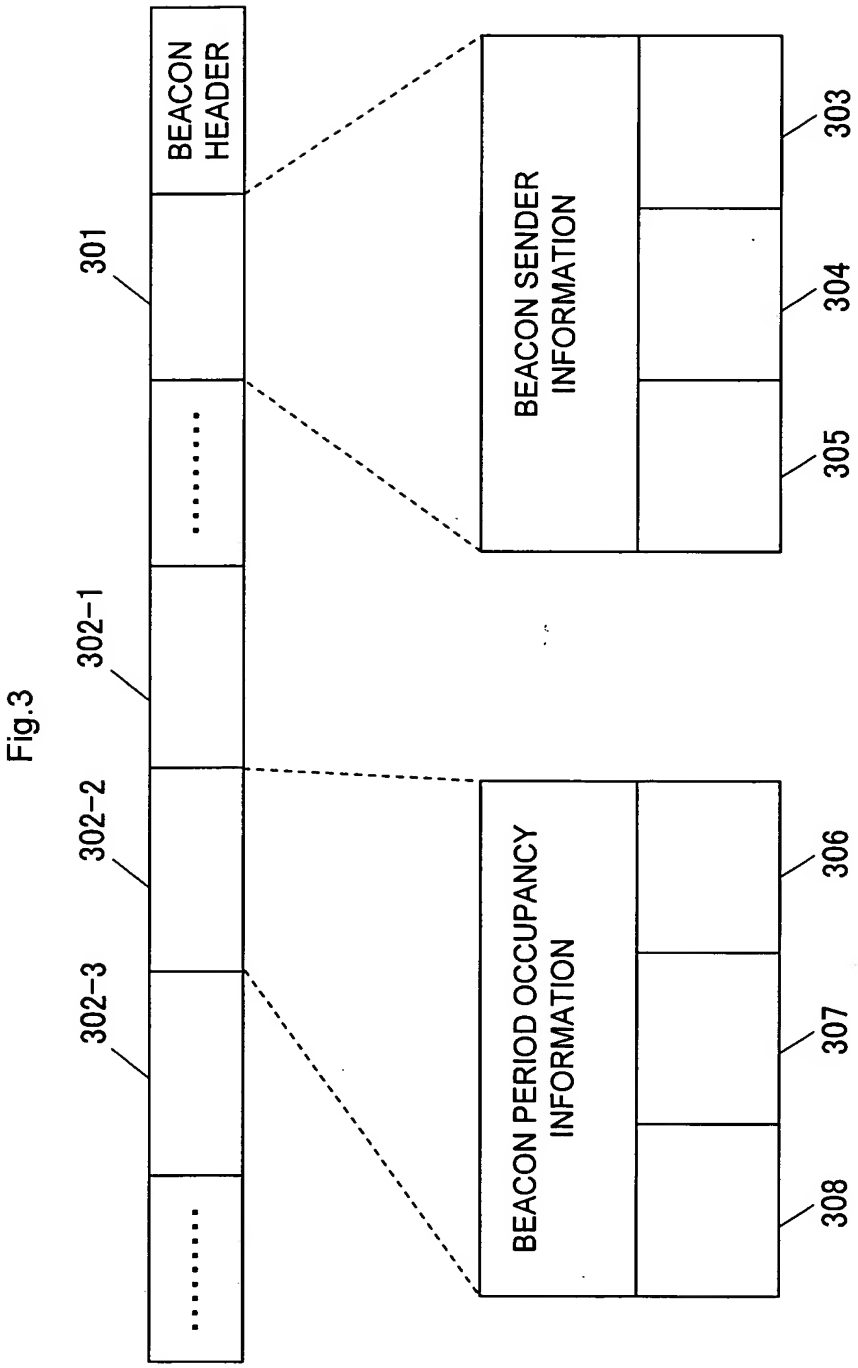

BEACON HEADER
301
.....
302-1
302-2
302-3
.....
BEACON SENDER INFORMATION
303
304
305
BEACON PERIOD OCCUPANCY INFORMATION
306
307
308

Fig.4

401 SLOT NUMBER	402 DEVICE ID	403 STATE OF USE	404 TYPE
1	A	O	Beacon
2	B	O	BPOIE
2	E	O	Beacon
3	C	O	BPOIE
4	D	O	Beacon
5	F	O	Beacon
6	O	O	O
7	O	O	O
8	O	O	O

Fig.5

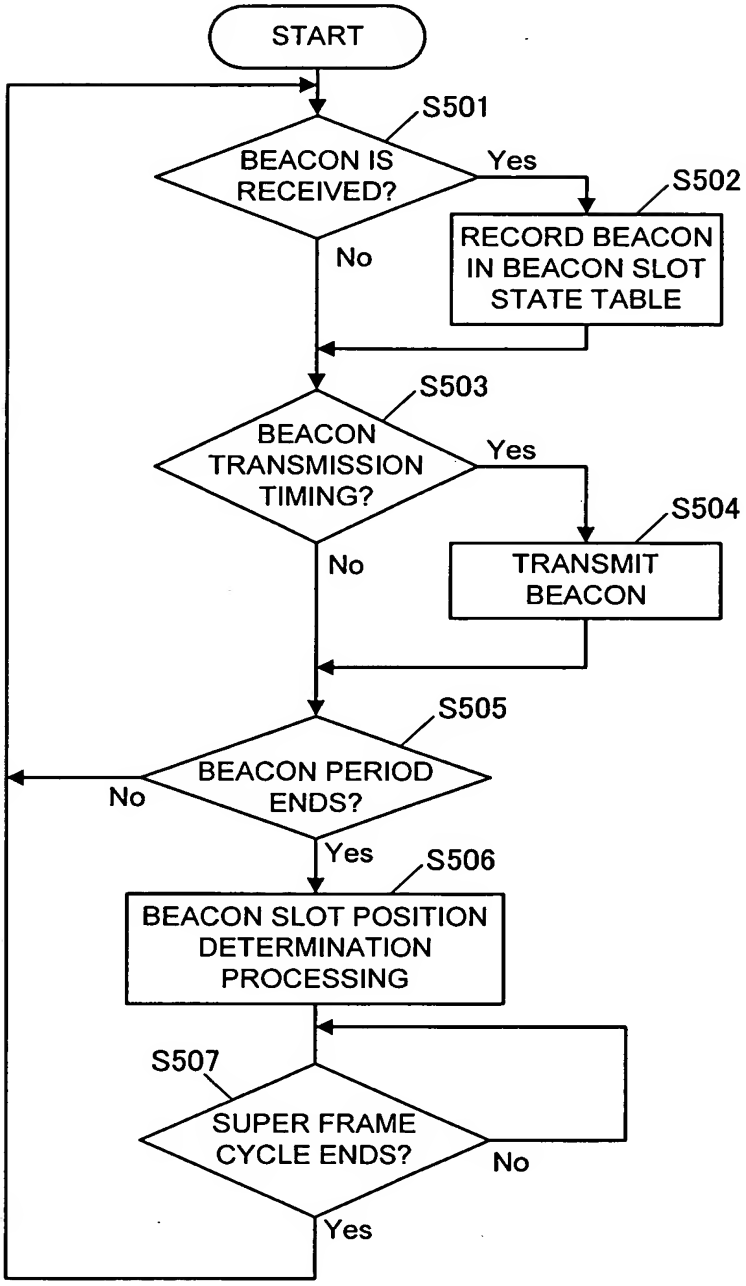

START
S501
BEACON IS RECEIVED?
Yes
S502
RECORD BEACON IN BEACON SLOT STATE TABLE
No
S503
BEACON TRANSMISSION TIMING?
Yes
S504
TRANSMIT BEACON
No
S505
BEACON PERIOD ENDS?
No
Yes
S506
BEACON SLOT POSITION DETERMINATION PROCESSING
S507
SUPER FRAME CYCLE ENDS?
No
Yes

Fig.6

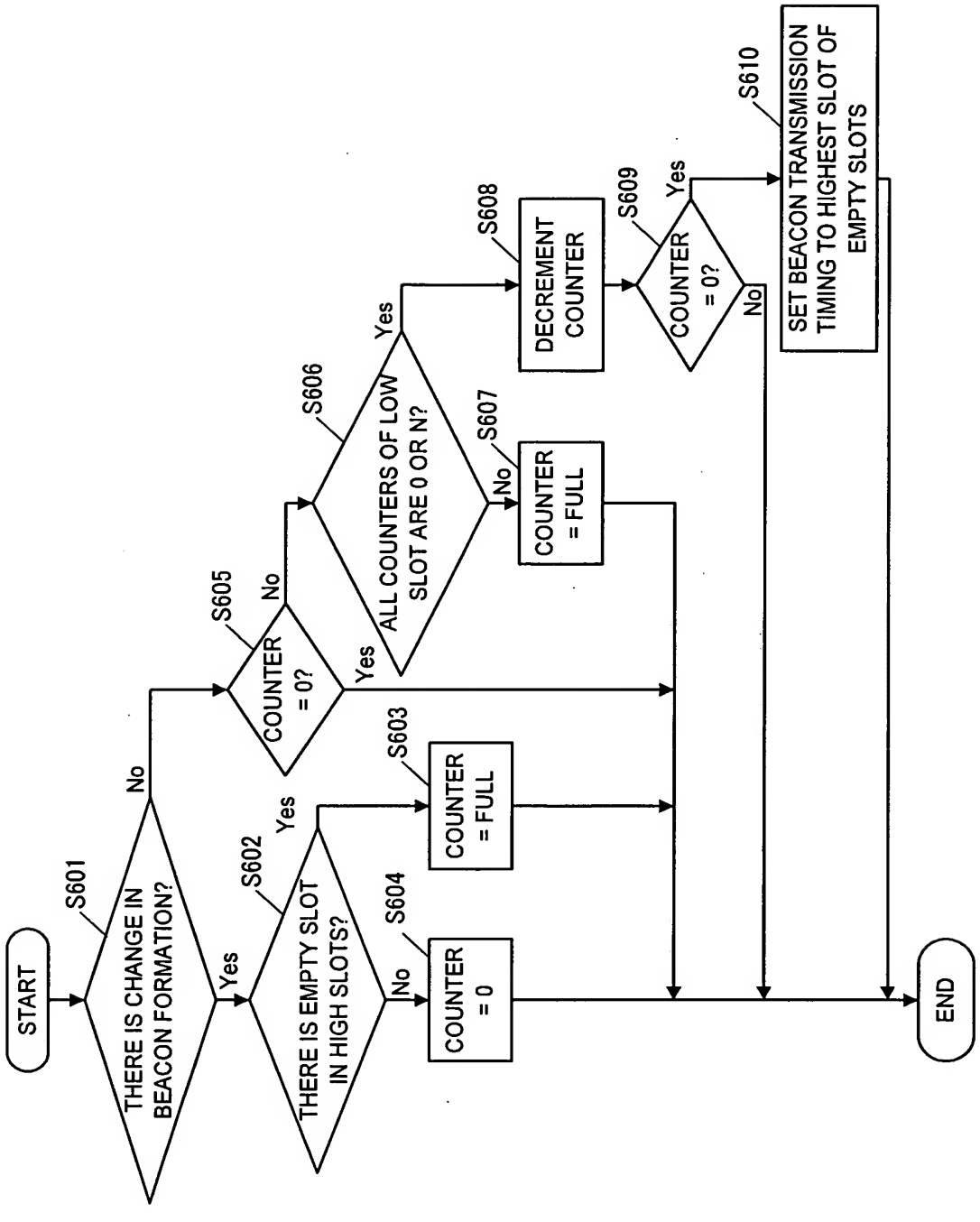

START
S601
THERE IS CHANGE IN BEACON FORMATION?
No
Yes
S602
THERE IS EMPTY SLOT IN HIGH SLOTS?
Yes
S603
COUNTER = FULL
No
S604
COUNTER = 0
S605
COUNTER = 0?
No
Yes
S606
ALL COUNTERS OF LOW SLOT ARE 0 OR N?
No
S607
COUNTER = FULL
Yes
S608
DECREMENT COUNTER
S609
COUNTER = 0?
Yes
No
S610
SET BEACON TRANSMISSION TIMING TO HIGHEST SLOT OF EMPTY SLOTS
END

Fig.7A

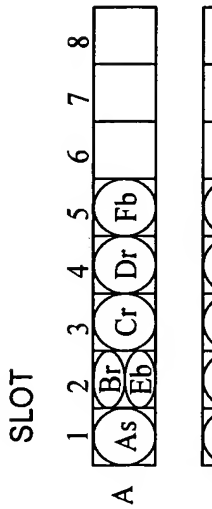


Fig.7B

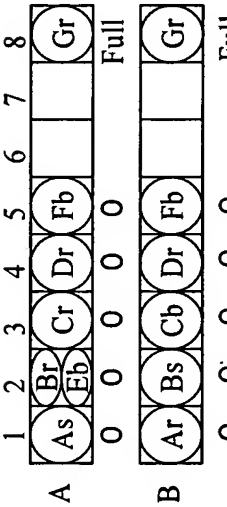


Fig.7C

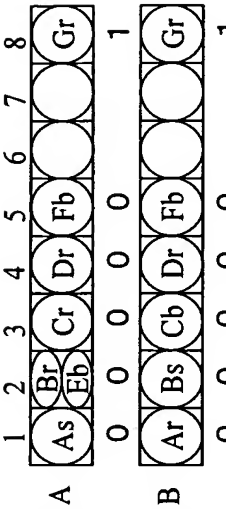


Fig.8A

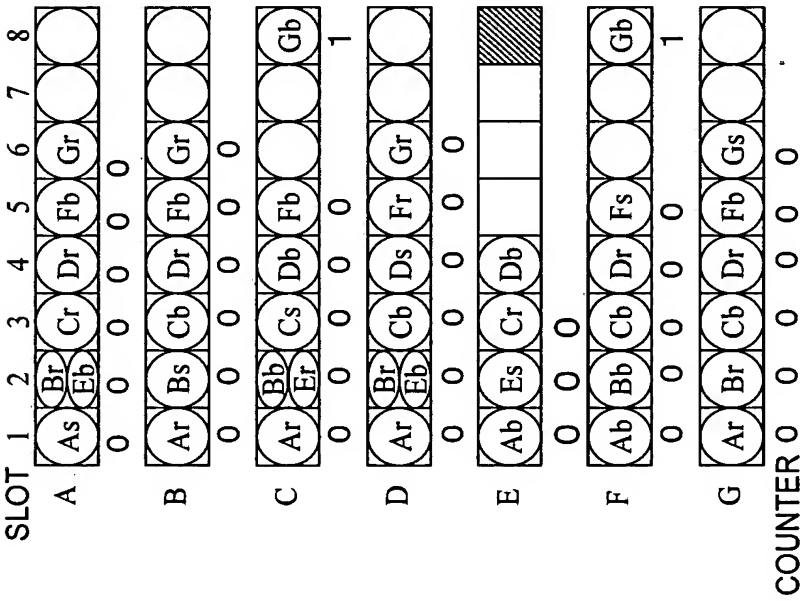

SLOT 1 2 3 4 5 6 7 8
A As Br Eb Cr Dr Fb Gr
0 0 0 0 0 0 0 0
B Ar Bs Cb Dr Fb Gr
0 0 0 0 0 0 0 0
C Ar Bb Er Cs Db Fb Gb
0 0 0 0 0 0 0 1
D Ar Br Eb Cb Ds Fr Gr
0 0 0 0 0 0 0 0
E Ab Es Cr Db
0 0 0 0
F Ab Bb Cb Dr Fs Gb
0 0 0 0 0 0 0 1
G Ar Br Cb Dr Fb Gs
COUNTER 0 0 0 0 0 0 0 0

Fig.8B

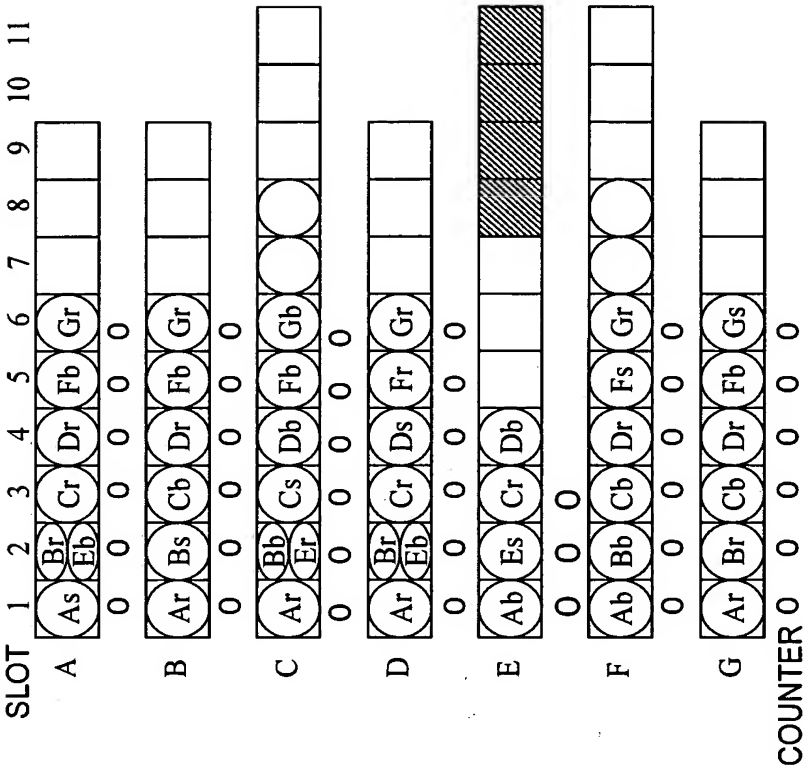

SLOT 1 2 3 4 5 6 7 8 9 10 11
A As Br Eb Cr Dr Fb Gr
0 0 0 0 0 0 0 0 0 0 0
B Ar Bs Cb Dr Fb Gr
0 0 0 0 0 0 0 0 0 0 0
C Ar Bb Er Cs Db Fb Gb
0 0 0 0 0 0 0 0 0 0 0
D Ar Br Eb Cr Ds Fr Gr
0 0 0 0 0 0 0 0 0 0 0
E Ab Es Cr Db
0 0 0 0
F Ab Bb Cb Dr Fs Gr
0 0 0 0 0 0 0 0 0 0 0
G Ar Br Cb Dr Fb Gs
COUNTER 0 0 0 0 0 0 0 0 0 0 0

Fig.9A

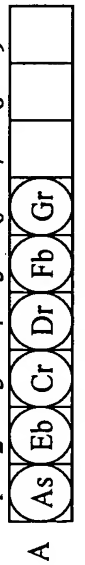


Fig.9B

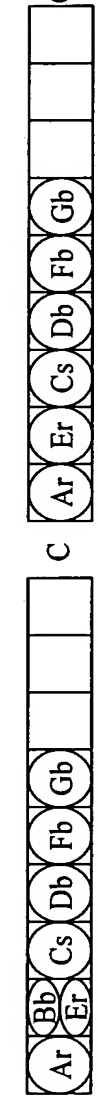


Fig.9C

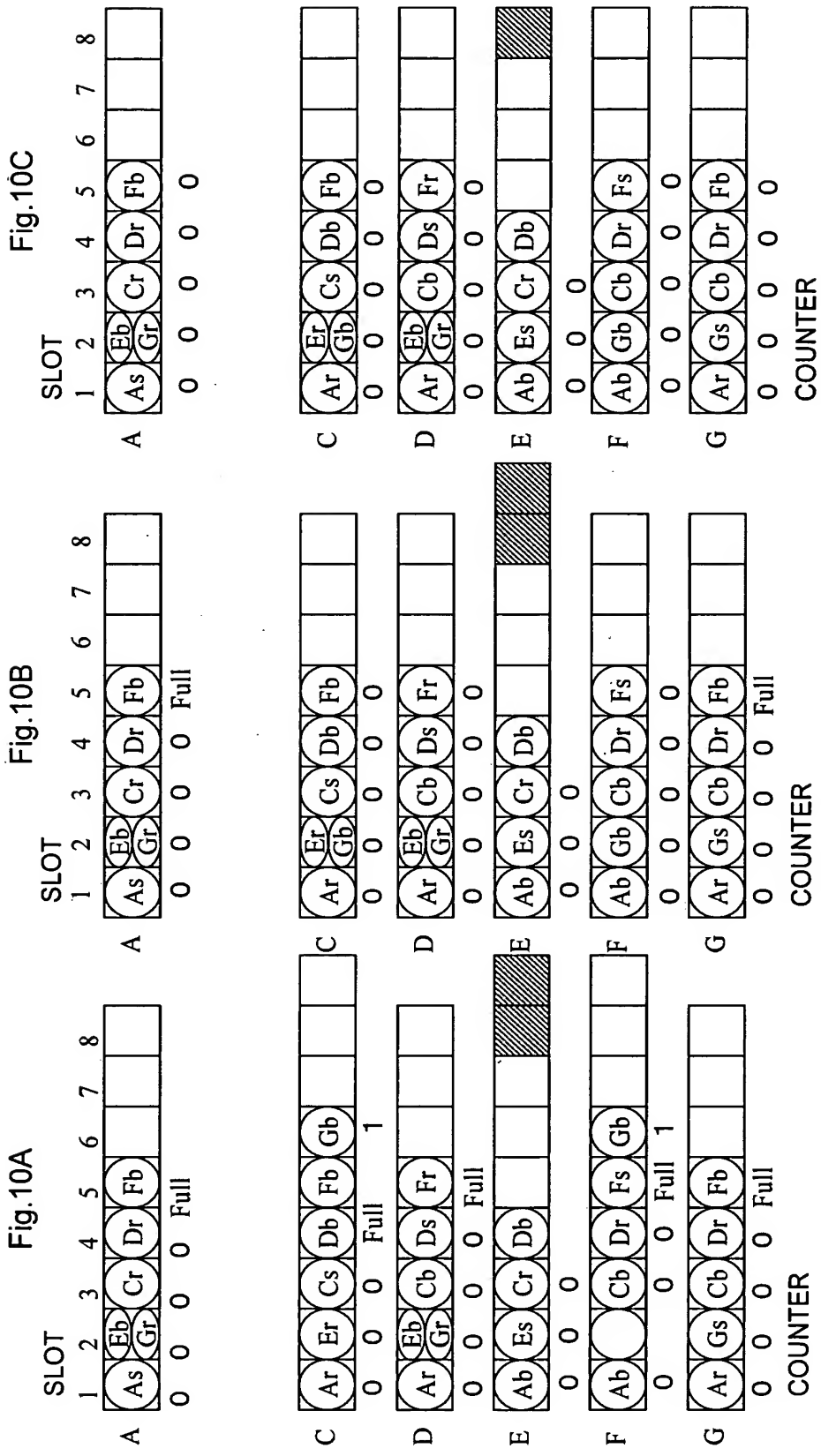


Fig.10A
Fig.10B
Fig.10C
SLOT
1 2 3 4 5 6 7 8
A
C
D
E
F
G
As Eb Gr Cr Dr Fb
Ar Er Gr Cs Db Fb
Ar Eb Gr Cb Ds Fr
Ab Es Cr Db
Ab Cb Dr Fs Gb
Ar Gs Cb Dr Fb
0 0 0 0 0 Full
0 0 0 0 Full 1
0 0 0 0 Full
0 0 0 0
0 0 0 0 Full 1
0 0 0 0 Full
COUNTER

Fig.11

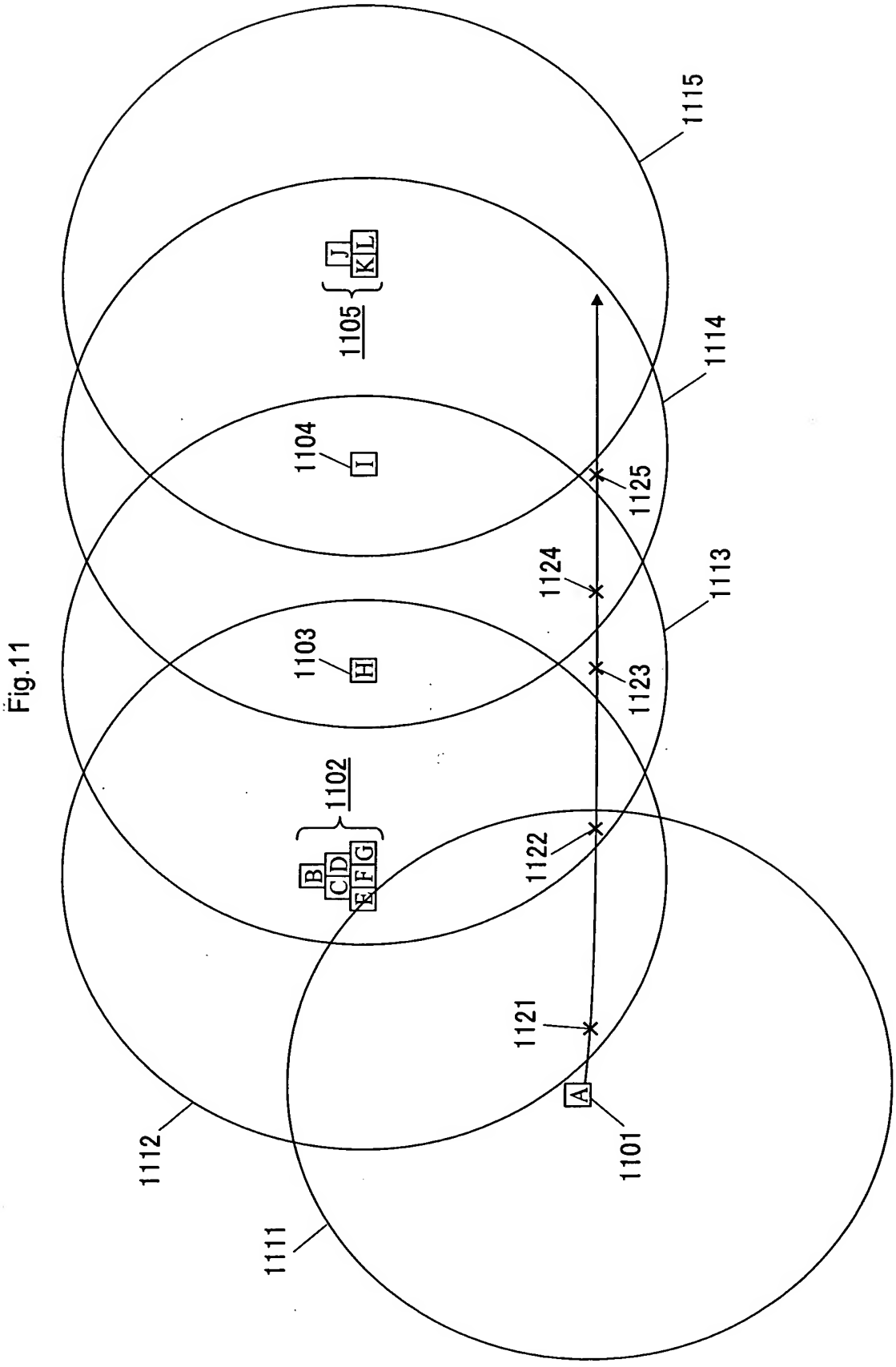

1115
1114
1113
1112
1111
1105
J
K
L
1104
I
1103
H
1102
B
C
D
E
F
G
1125
1124
1123
1122
1121
A
1101

Fig.12A

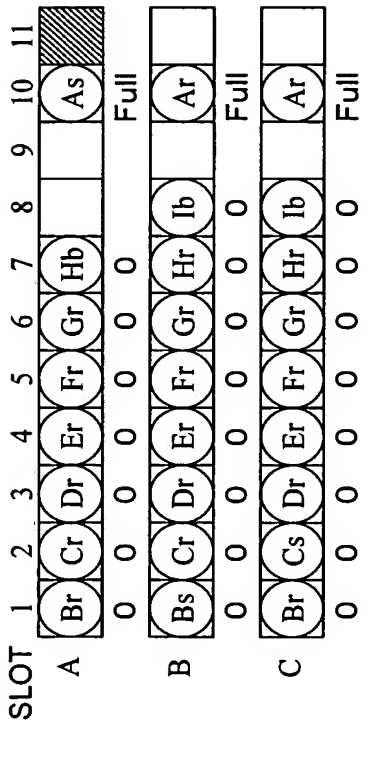


Fig.12B

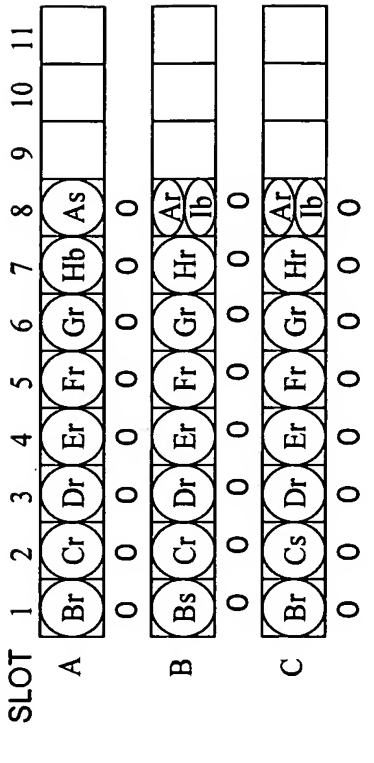


Fig.13A

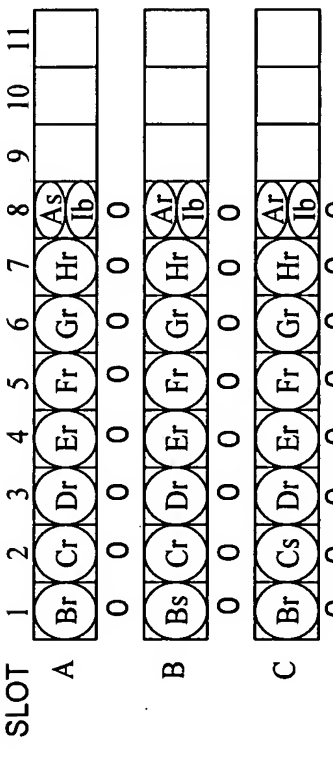


Fig.13B

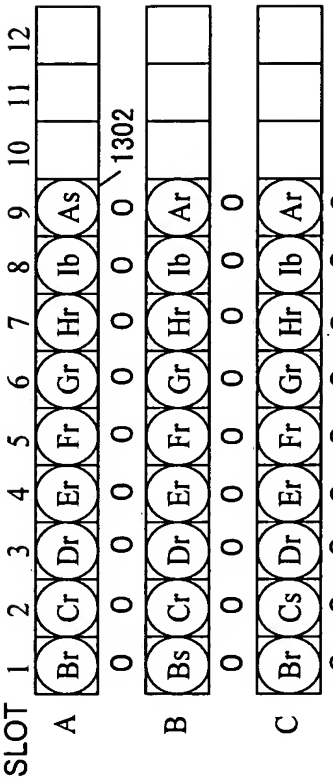


Fig.14A

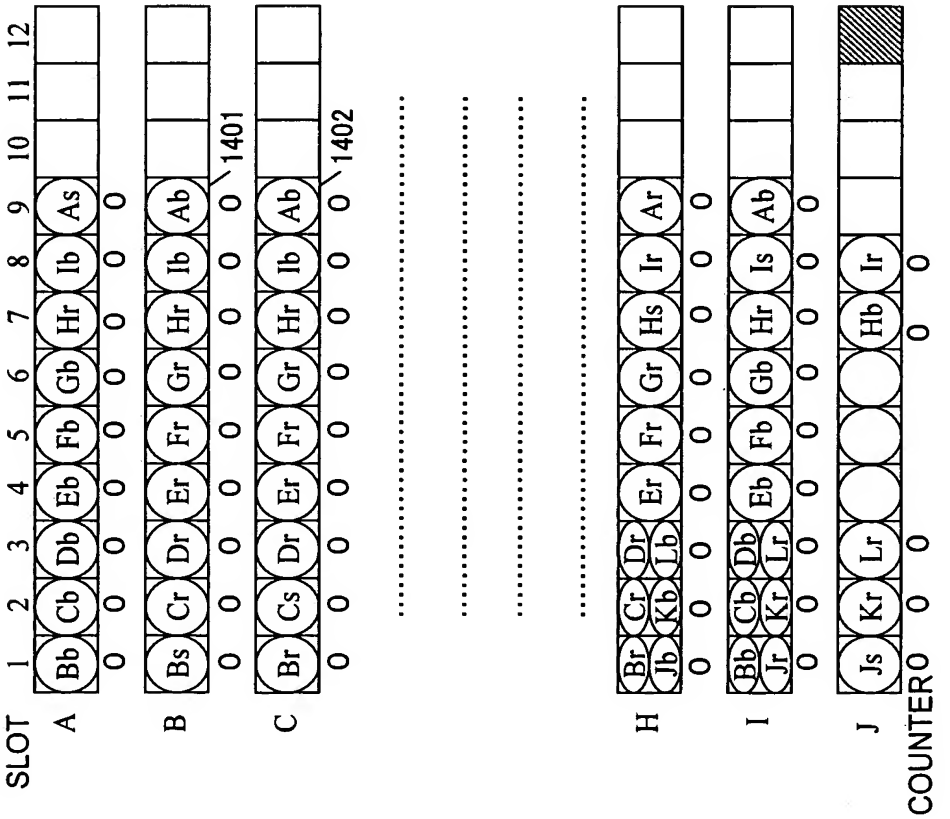


Fig.14B

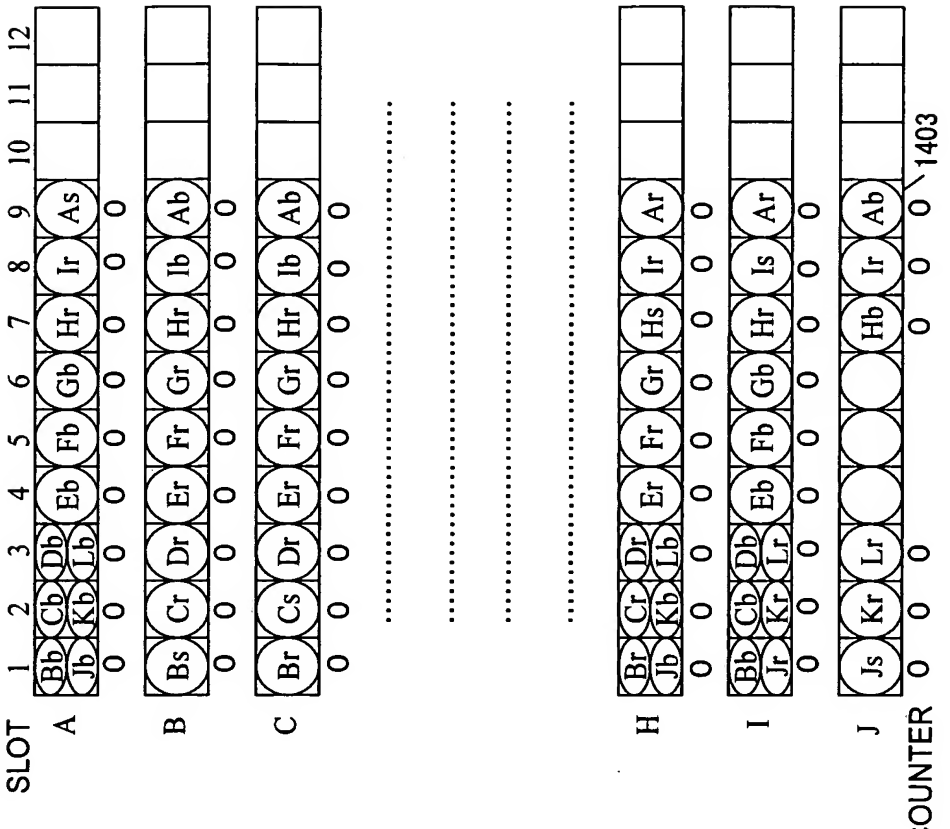


Fig.15A

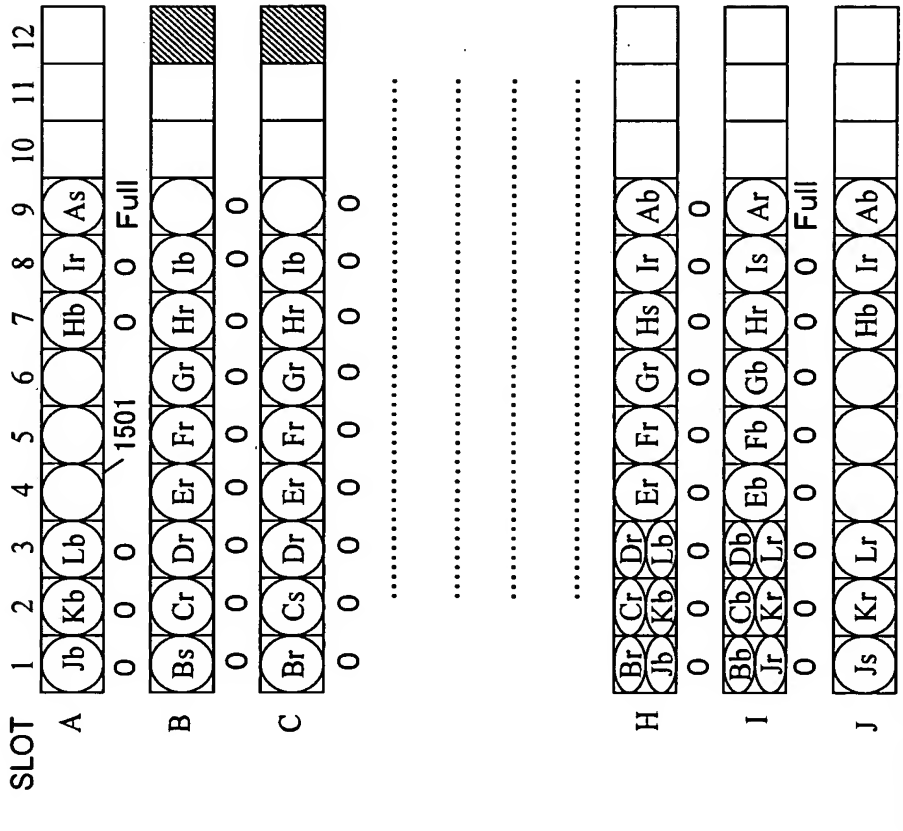
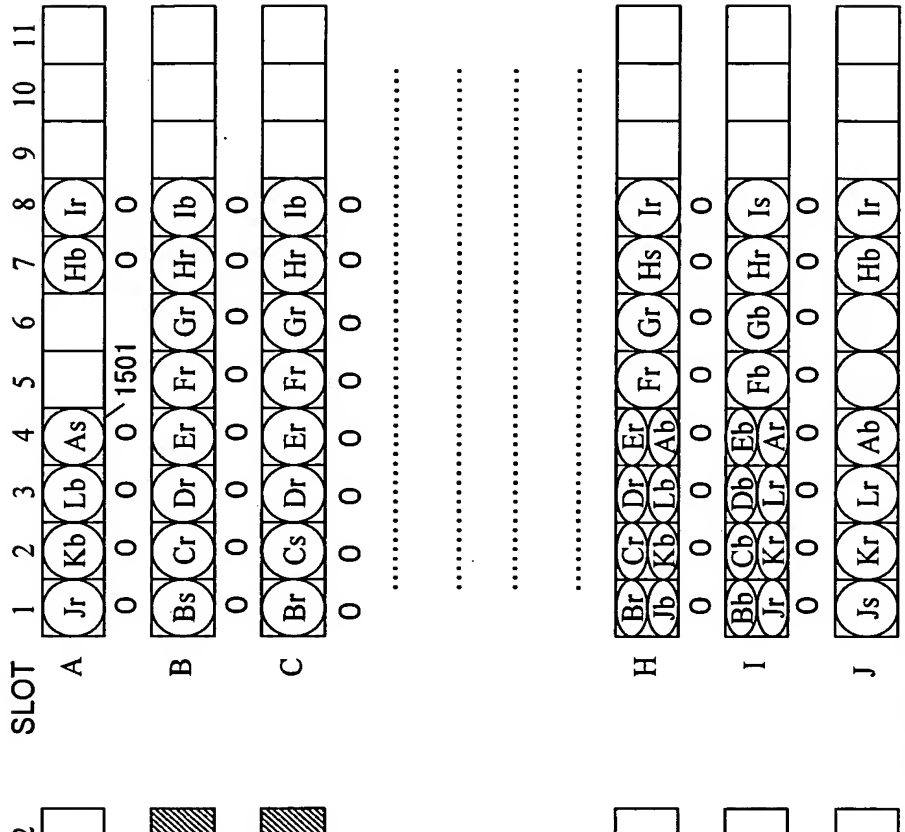


Fig.15B



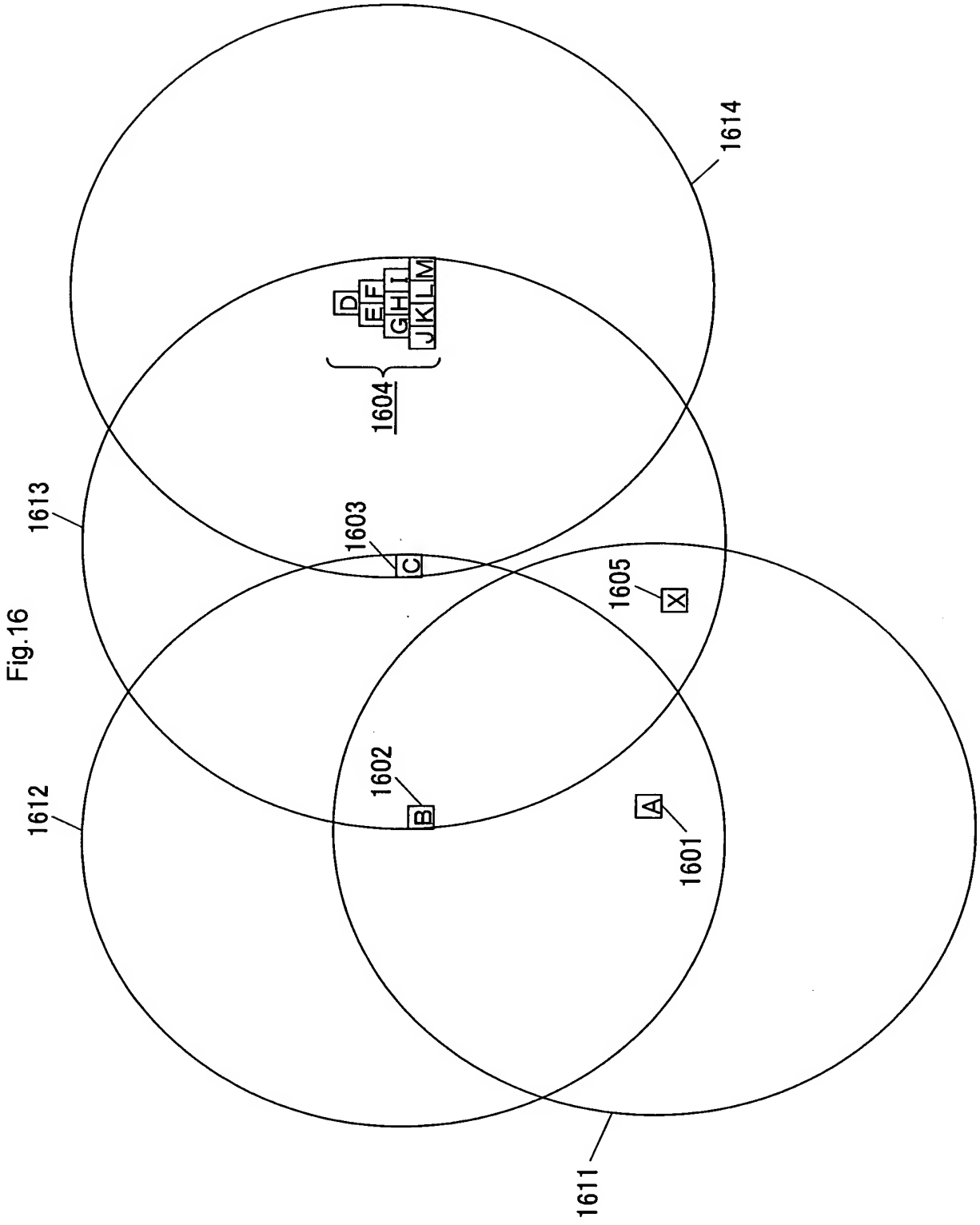

1614
D
E
F
G
H
I
J
K
L
M
1604
1613
1603
C
1605
X
1602
B
A
1601
1612
1611

Fig.16

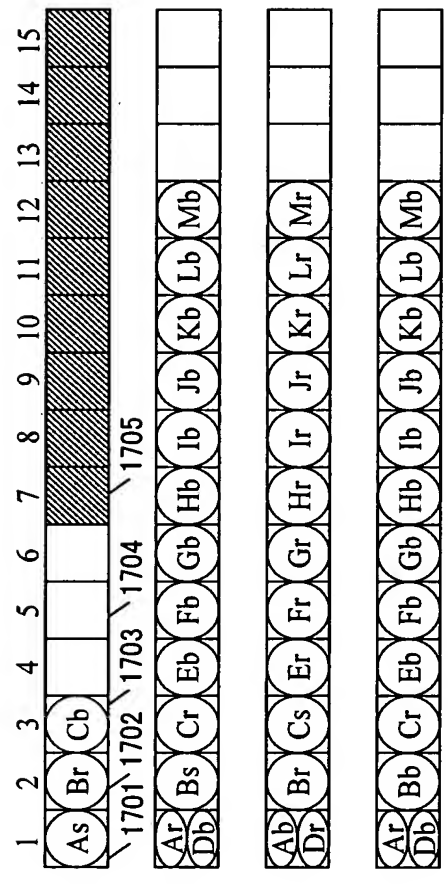


Fig.17A

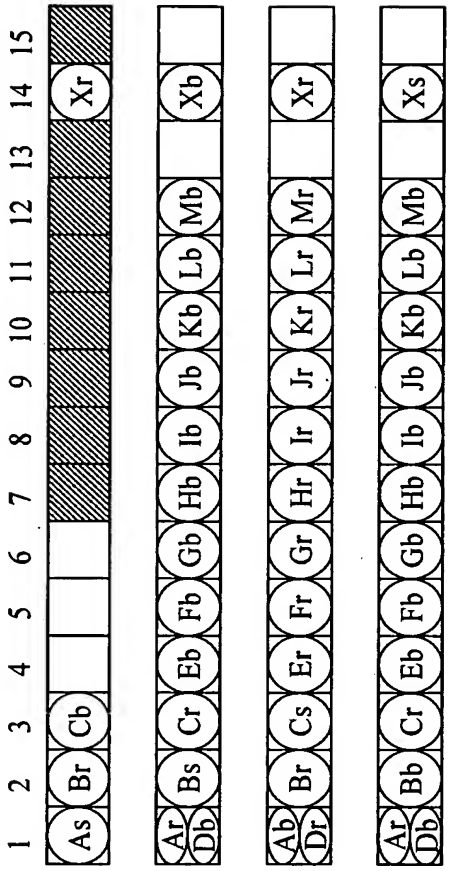


Fig.17B

Fig.18

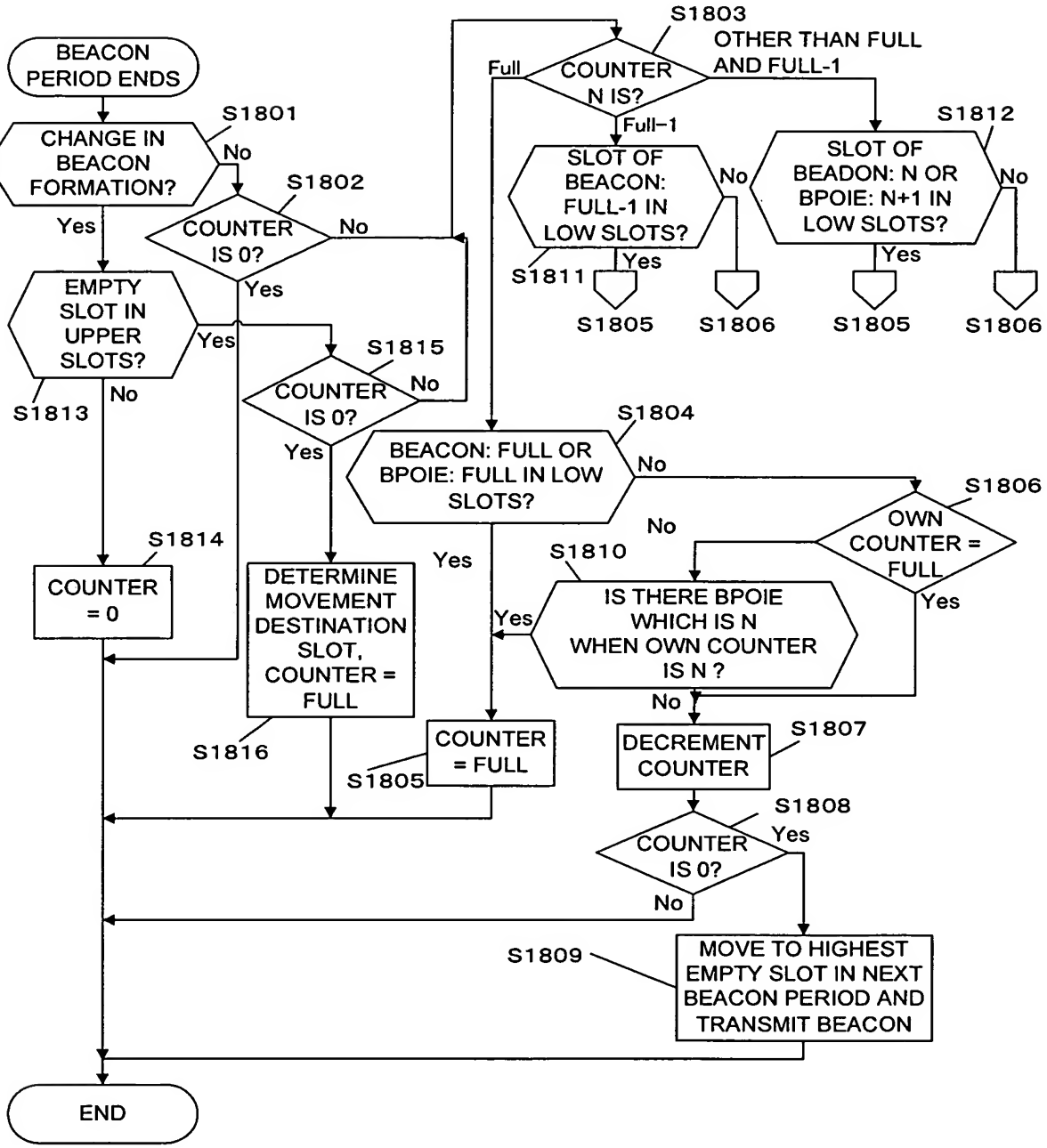

BEACON PERIOD ENDS
S1801
CHANGE IN BEACON FORMATION?
No
Yes
S1802
COUNTER IS 0?
No
Yes
EMPTY SLOT IN UPPER SLOTS?
Yes
No
S1813
S1814
COUNTER = 0
S1815
COUNTER IS 0?
No
Yes
DETERMINE MOVEMENT DESTINATION SLOT, COUNTER = FULL
S1816
S1803
COUNTER N IS?
Full
Full-1
OTHER THAN FULL AND FULL-1
SLOT OF BEACON: FULL-1 IN LOW SLOTS?
No
Yes
S1811
S1805
S1806
S1812
SLOT OF BEADON: N OR BPOIE: N+1 IN LOW SLOTS?
No
Yes
S1805
S1806
S1804
BEACON: FULL OR BPOIE: FULL IN LOW SLOTS?
No
Yes
S1806
OWN COUNTER = FULL
No
Yes
S1810
IS THERE BPOIE WHICH IS N WHEN OWN COUNTER IS N ?
Yes
No
COUNTER = FULL
S1805
DECREMENT COUNTER
S1807
S1808
COUNTER IS 0?
Yes
No
S1809
MOVE TO HIGHEST EMPTY SLOT IN NEXT BEACON PERIOD AND TRANSMIT BEACON
END

Fig.19

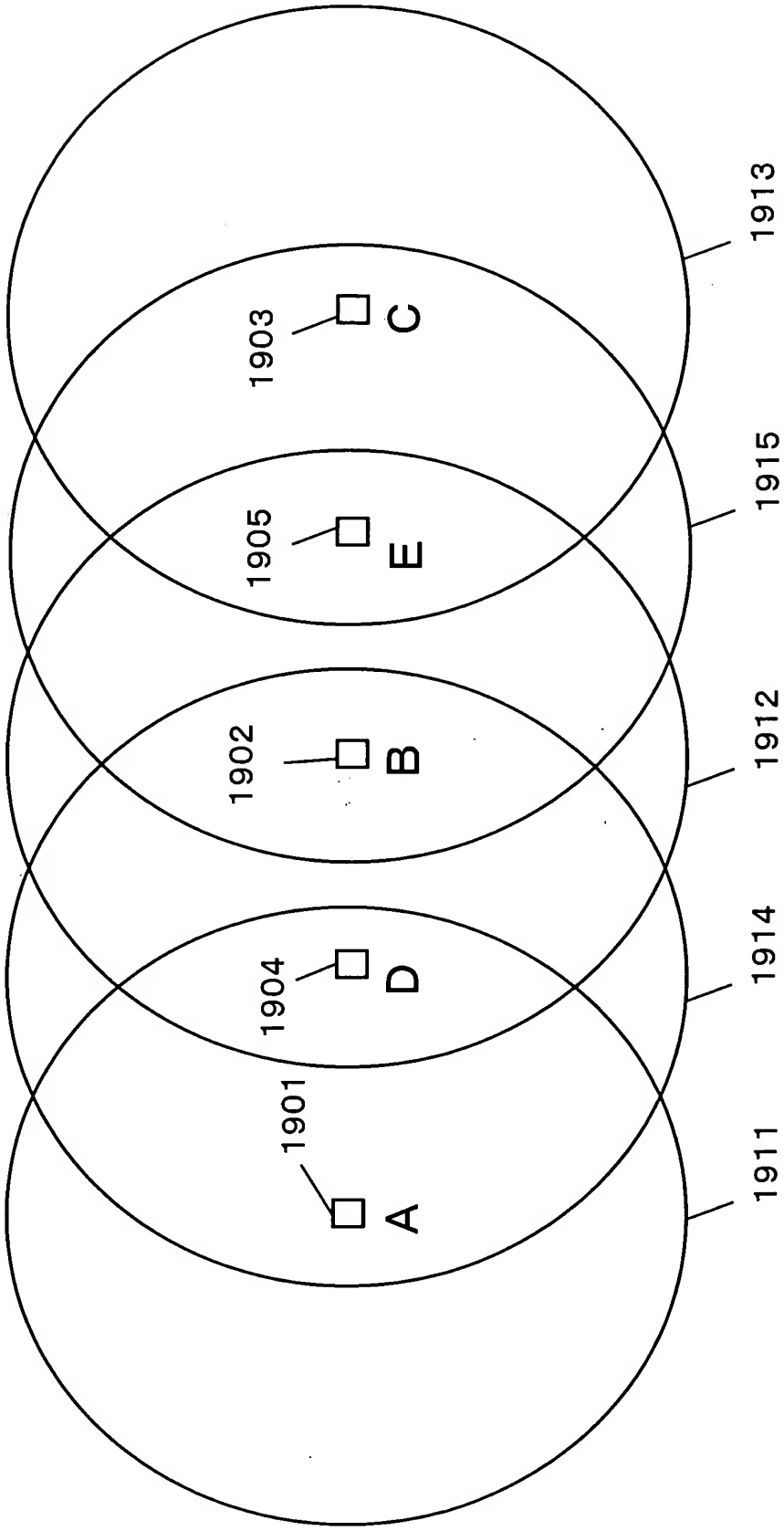


Fig.20A

Fig.20B

Fig.20C

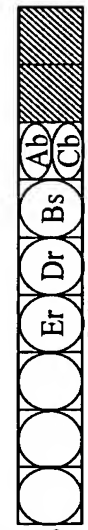


Fig.21A

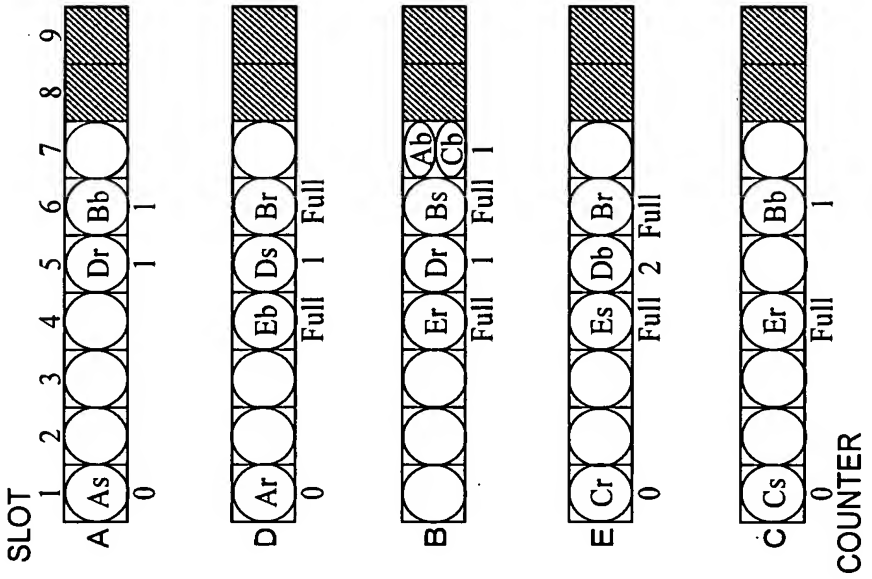


Fig.21B

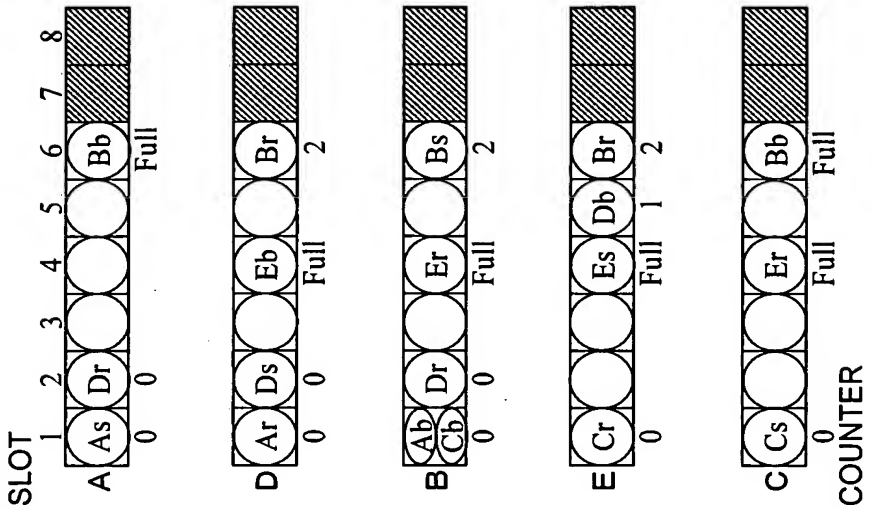


Fig.22A

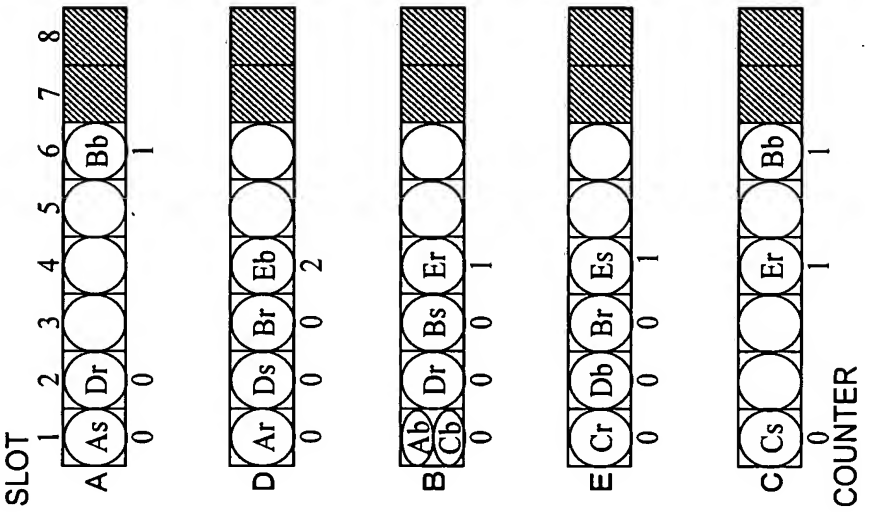


Fig.22B

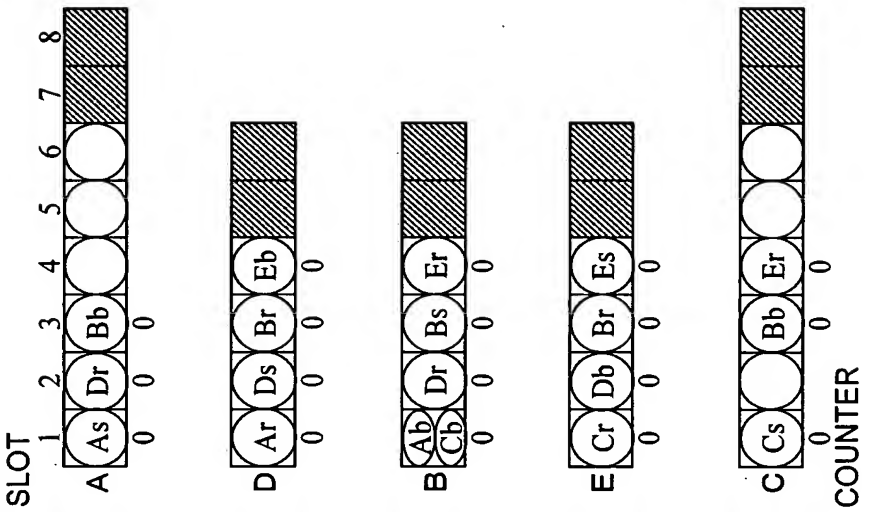
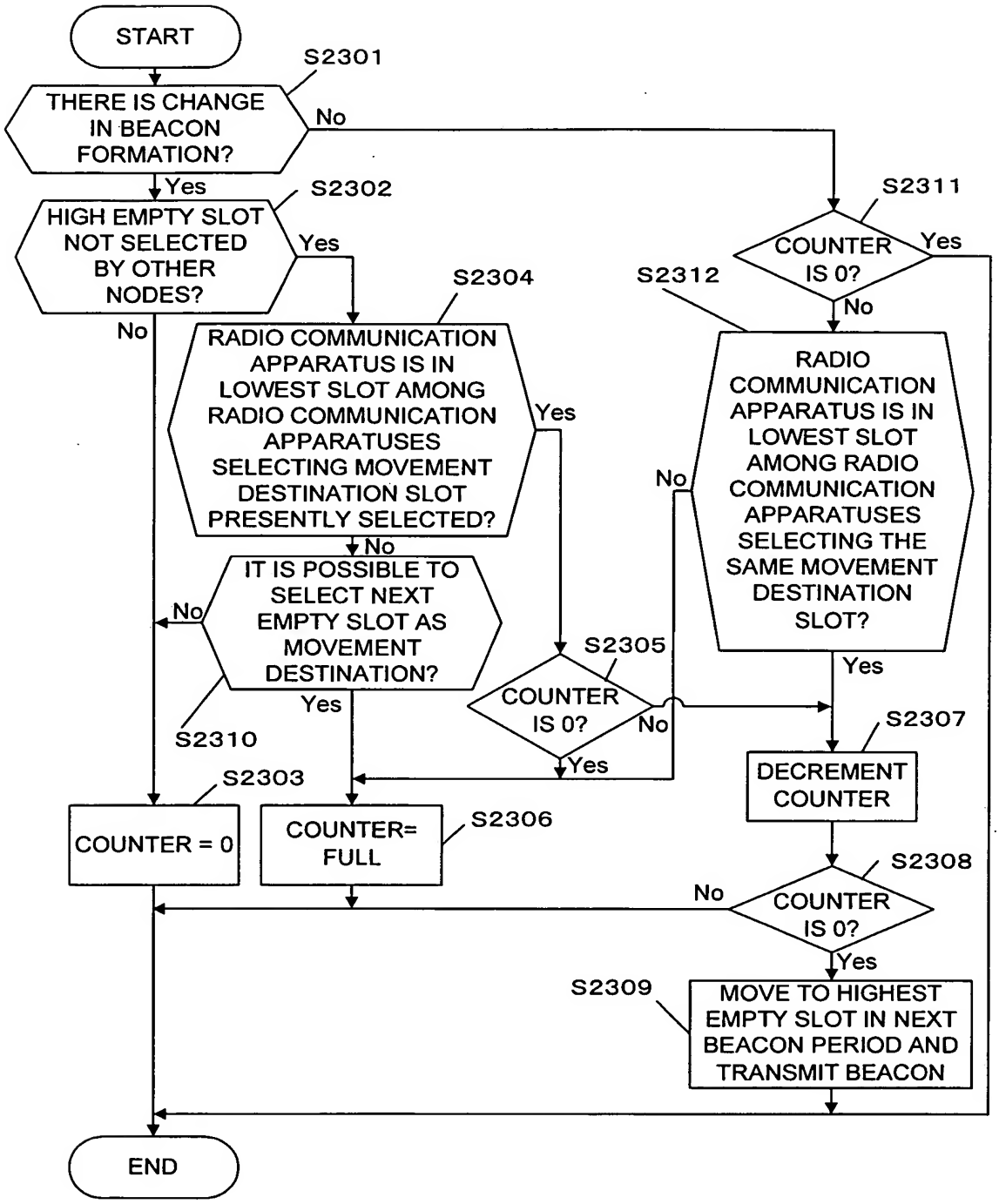


Fig.23


START
S2301
THERE IS CHANGE IN BEACON FORMATION?
No
Yes
S2302
HIGH EMPTY SLOT NOT SELECTED BY OTHER NODES?
Yes
No
S2304
RADIO COMMUNICATION APPARATUS IS IN LOWEST SLOT AMONG RADIO COMMUNICATION APPARATUSES SELECTING MOVEMENT DESTINATION SLOT PRESENTLY SELECTED?
Yes
No
IT IS POSSIBLE TO SELECT NEXT EMPTY SLOT AS MOVEMENT DESTINATION?
No
Yes
S2310
S2303
COUNTER = 0
COUNTER= FULL
S2306
S2305
COUNTER IS 0?
No
Yes
S2311
COUNTER IS 0?
Yes
No
S2312
RADIO COMMUNICATION APPARATUS IS IN LOWEST SLOT AMONG RADIO COMMUNICATION APPARATUSES SELECTING THE SAME MOVEMENT DESTINATION SLOT?
No
Yes
S2307
DECREMENT COUNTER
S2308
COUNTER IS 0?
No
Yes
S2309
MOVE TO HIGHEST EMPTY SLOT IN NEXT BEACON PERIOD AND TRANSMIT BEACON
END

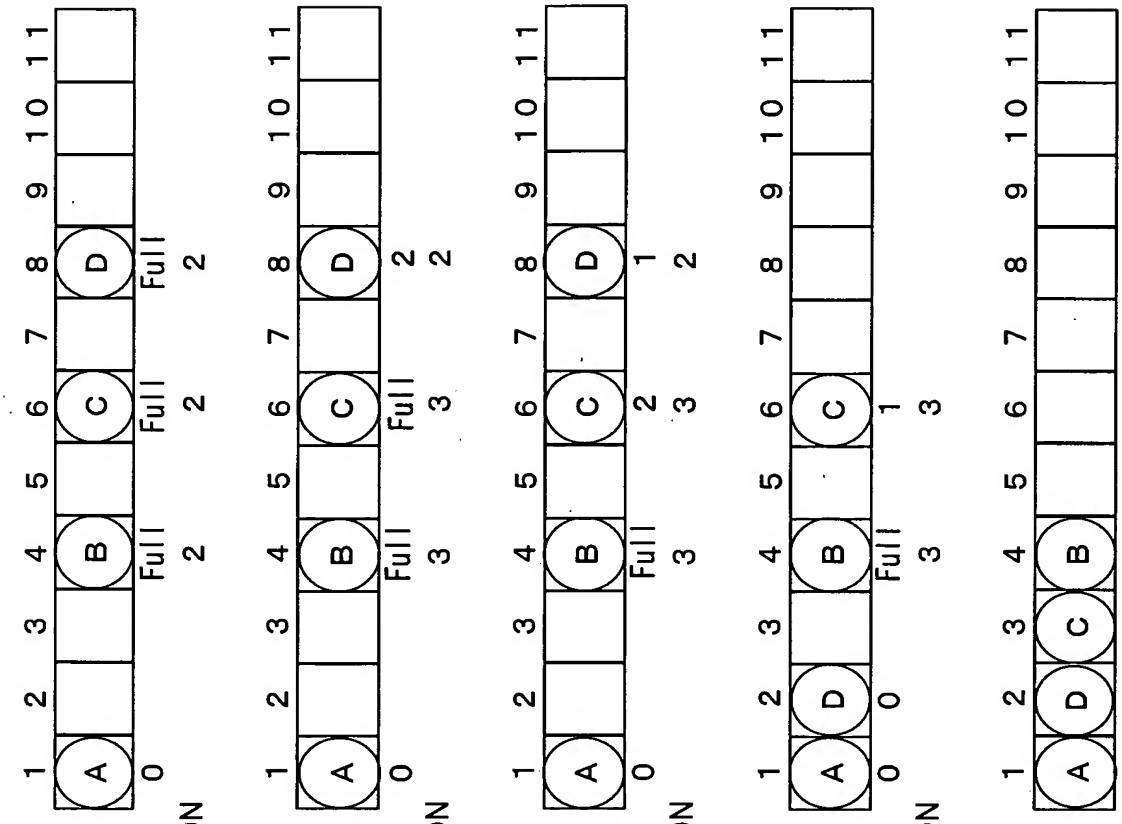


Fig.24A

Fig.24B

Fig.24C

Fig.24D

Fig.24E

Fig.25

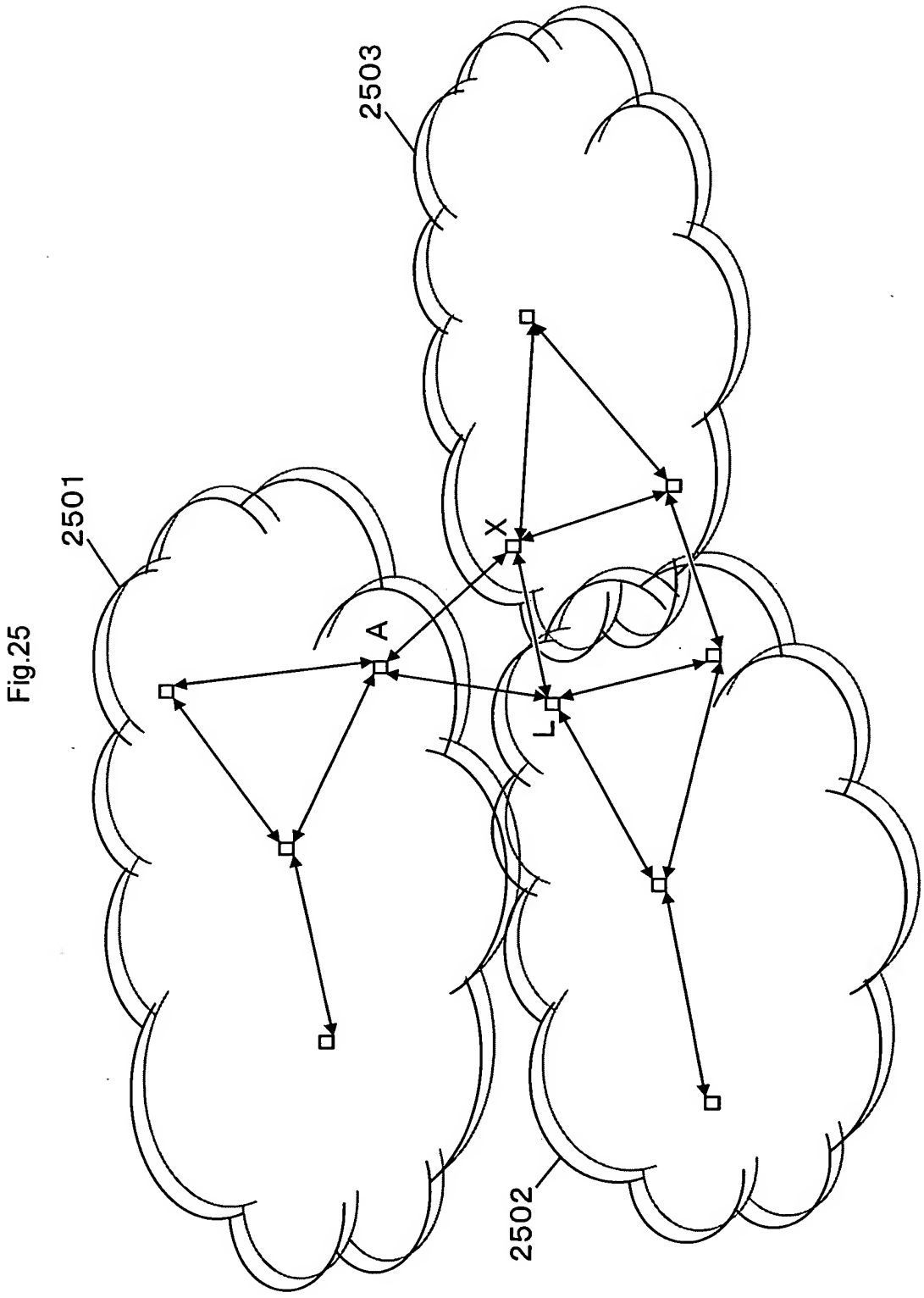


Fig.26A

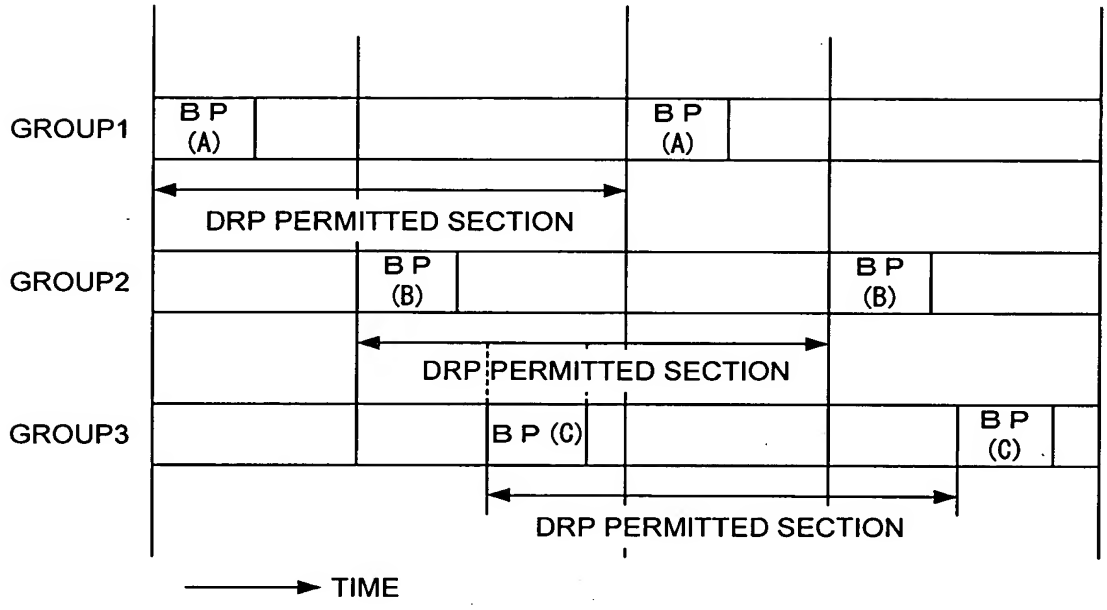


Fig.26B

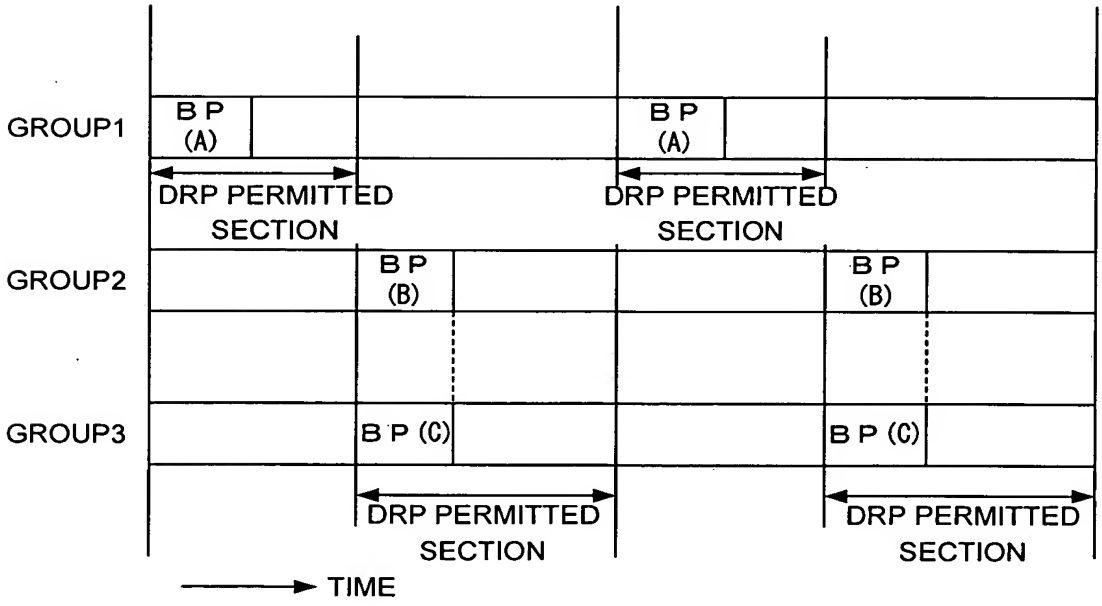
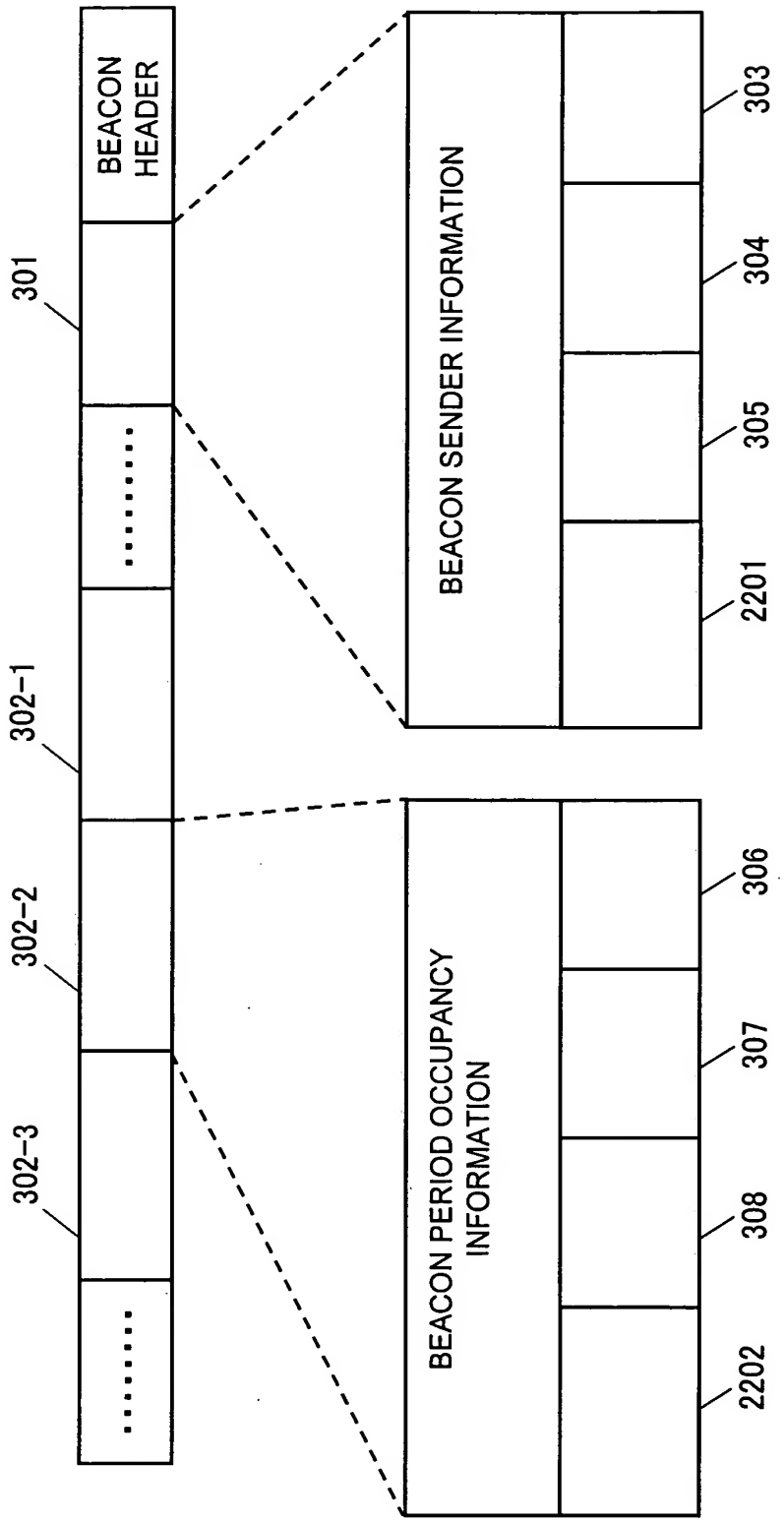


Fig.27

401 SLOT NUMBER	402 DEVICE ID	403 STATE OF USE	404 TYPE	405 TO-BE-MOVED DEVICE ID
1	A	O	Beacon	O
2	O	O	O	O
3	O	O	O	O
4	B	3	Beacon	2
5	O	O	O	O
6	C	3	Beacon	2
7	O	O	O	O
8	D	3	Beacon	2

Fig.28


BEACON HEADER
301
302-1
302-2
302-3
BEACON SENDER INFORMATION
303
304
305
2201
BEACON PERIOD OCCUPANCY INFORMATION
306
307
308
2202

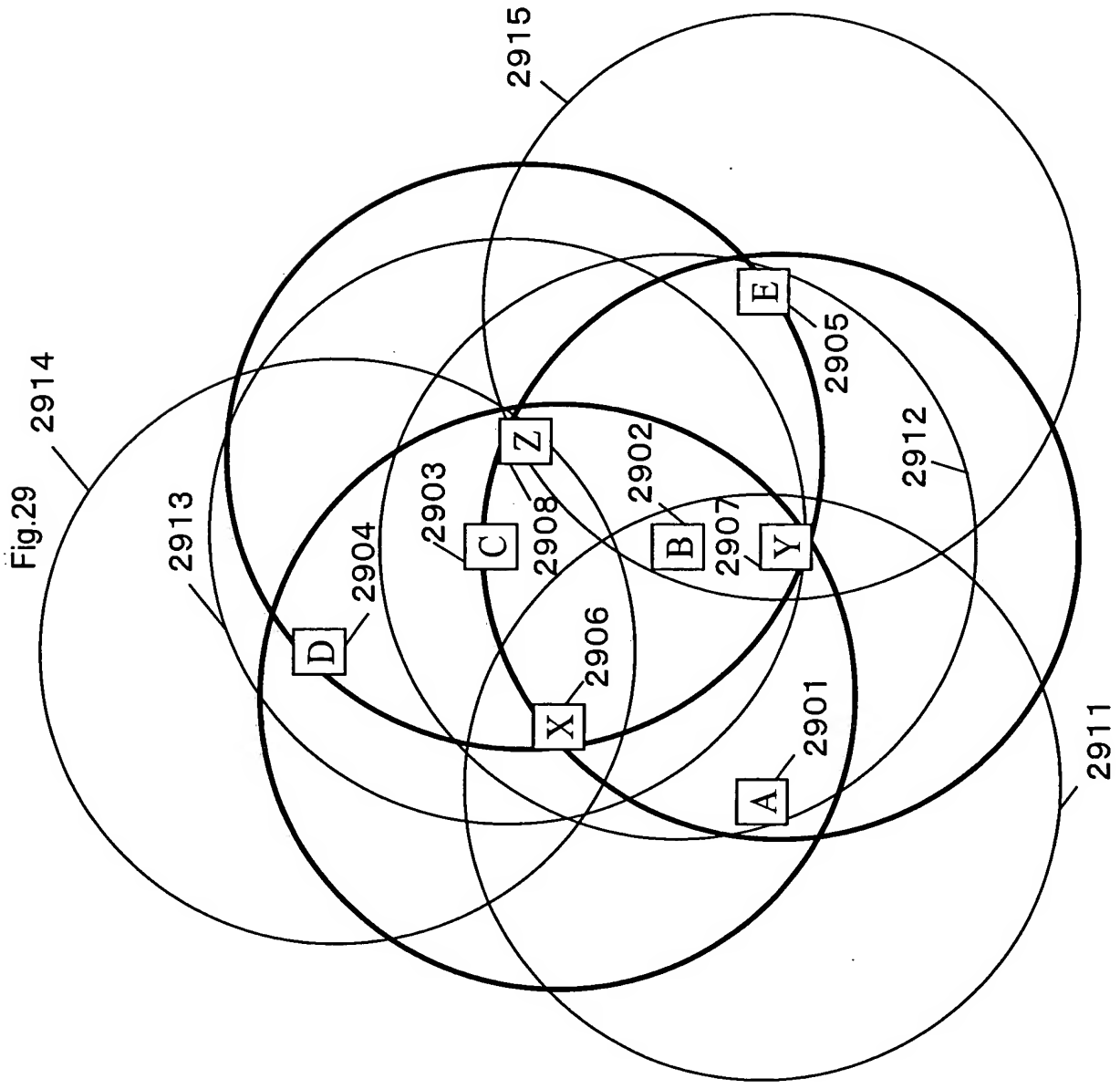

2915
2914
2913
2911
2912
2905
2902
2903
2904
2908
2907
2906
2901
E
Z
C
B
Y
D
X
A

Fig.29

Fig.30

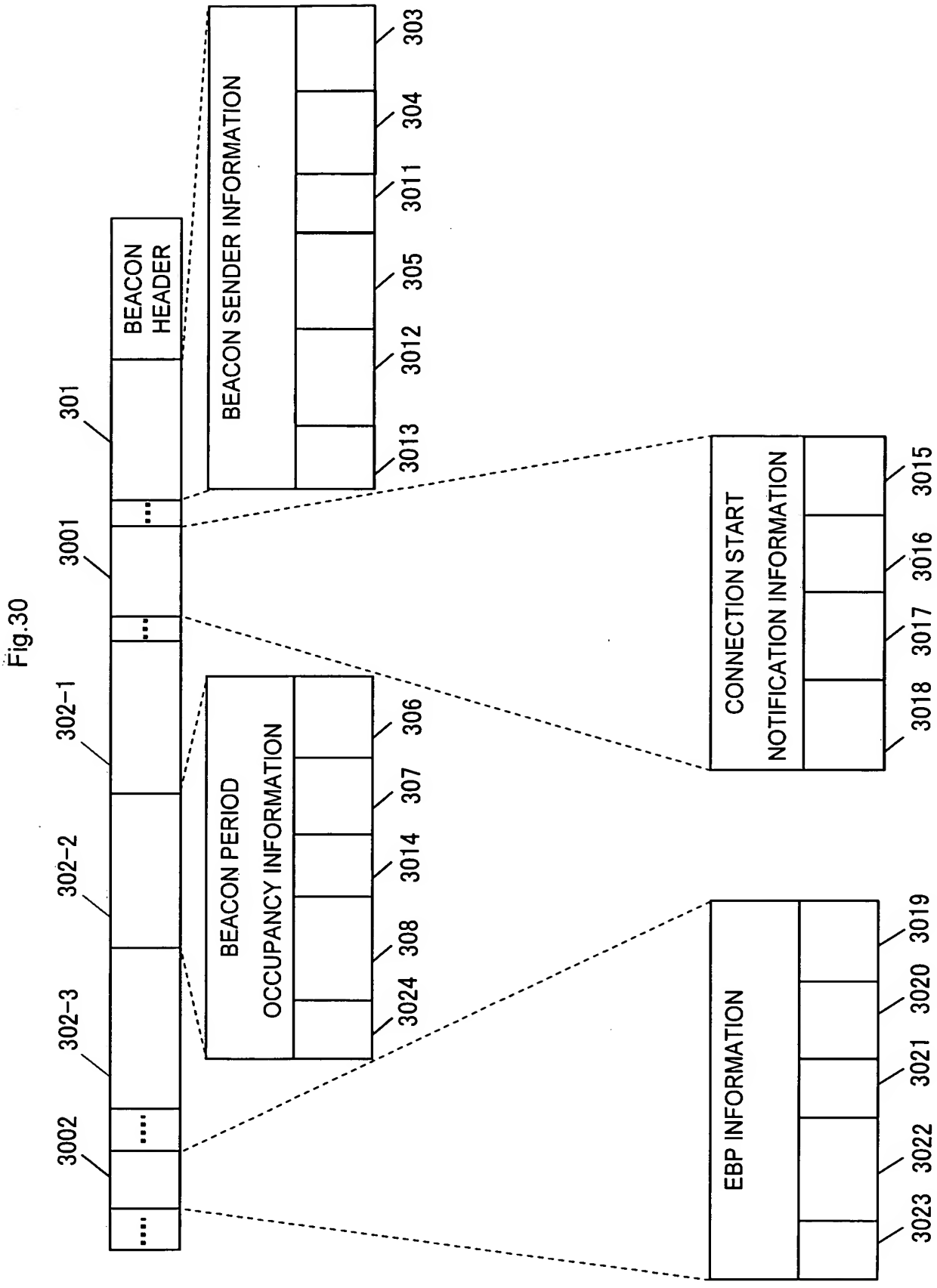

BEACON HEADER
301
3001
302-1
302-2
302-3
3002
BEACON SENDER INFORMATION
303
304
3011
305
3012
3013
BEACON PERIOD OCCUPANCY INFORMATION
306
307
3014
308
3024
CONNECTION START NOTIFICATION INFORMATION
3015
3016
3017
3018
EBP INFORMATION
3019
3020
3021
3022
3023

Fig.31

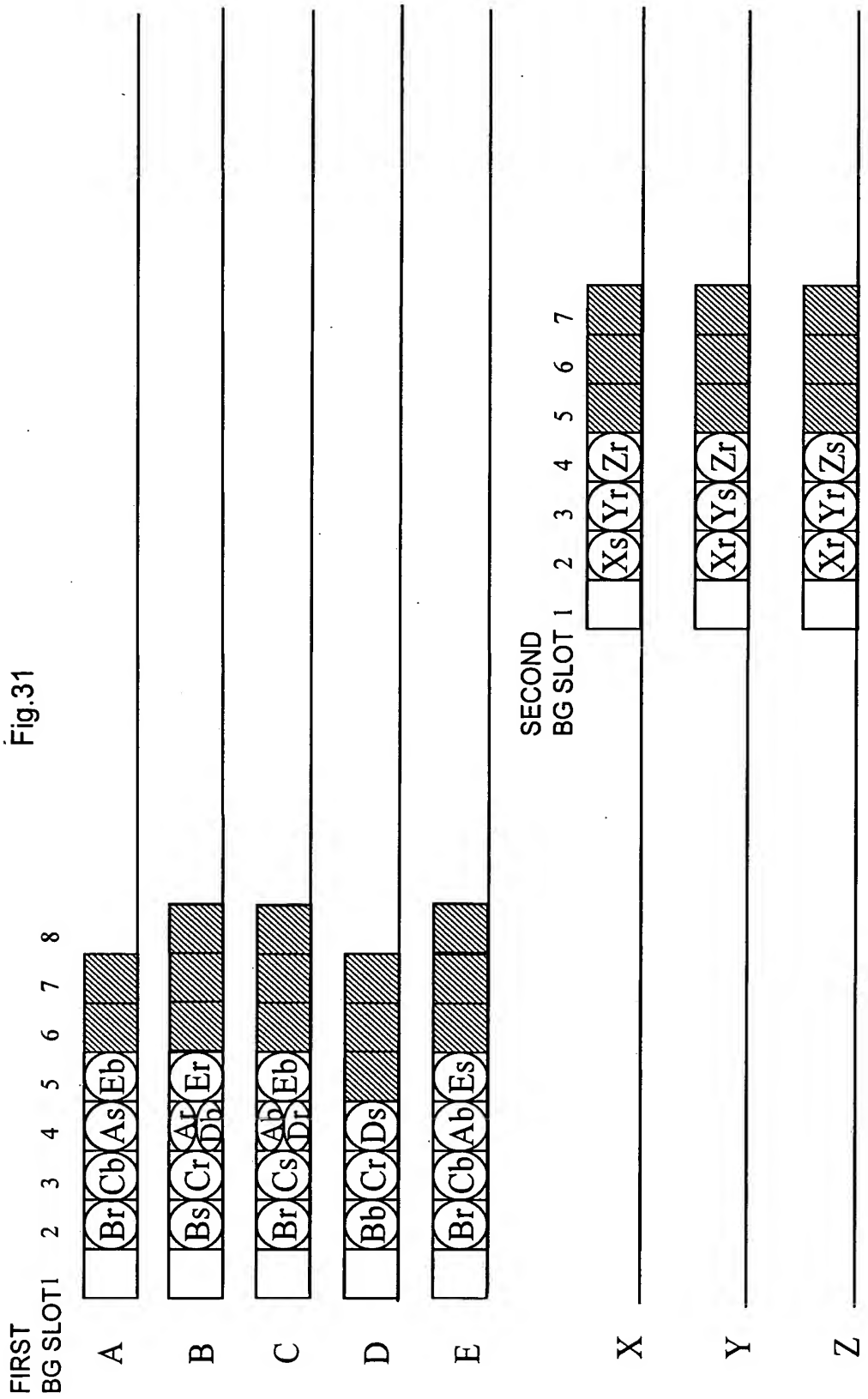

FIRST
BG SLOT1 2 3 4 5 6 7 8
A
Br Cb As Eb
B
Bs Cr Ar Er Db
C
Br Cs Ab Eb Dr
D
Bb Cr Ds
E
Br Cb Ab Es
SECOND
BG SLOT 1 2 3 4 5 6 7
X
Xs Yr Zr
Y
Xr Ys Zr
Z
Xr Yr Zs

Fig.32

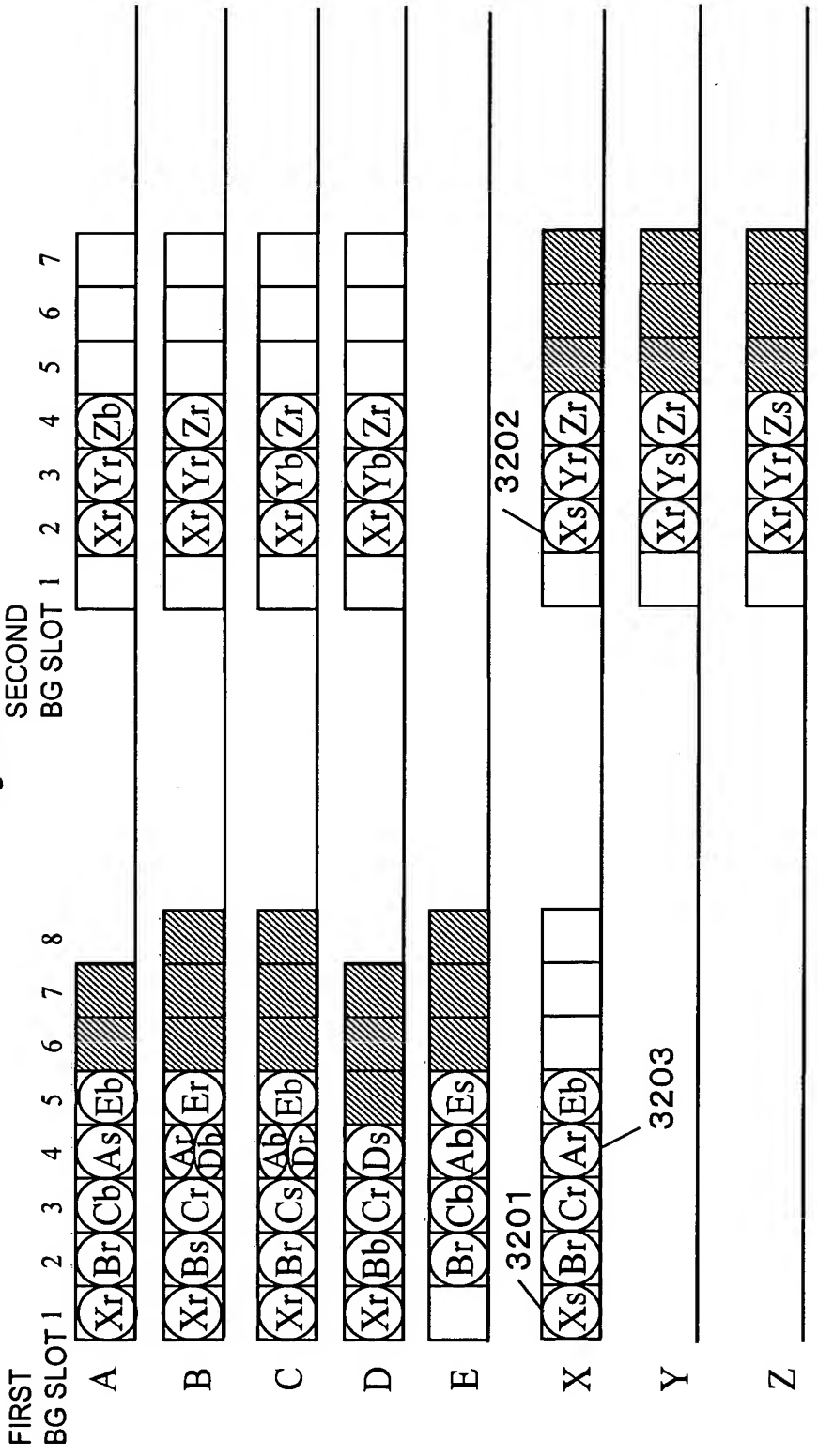

FIRST
BG SLOT 1 2 3 4 5 6 7 8
SECOND
BG SLOT 1 2 3 4 5 6 7
A
B
C
D
E
X
Y
Z
Xr Br Cb As Eb
Xr Bs Cr Ar Er Db
Xr Br Cs Ab Eb Dr
Xr Bb Cr Ds
Br Cb Ab Es
Xs Br Cr Ar Eb
Xr Yr Zb
Xr Yr Zr
Xr Yb Zr
Xr Yb Zr
Xs Yr Zr
Xr Ys Zr
Xr Yr Zs
3201
3202
3203

Fig.33

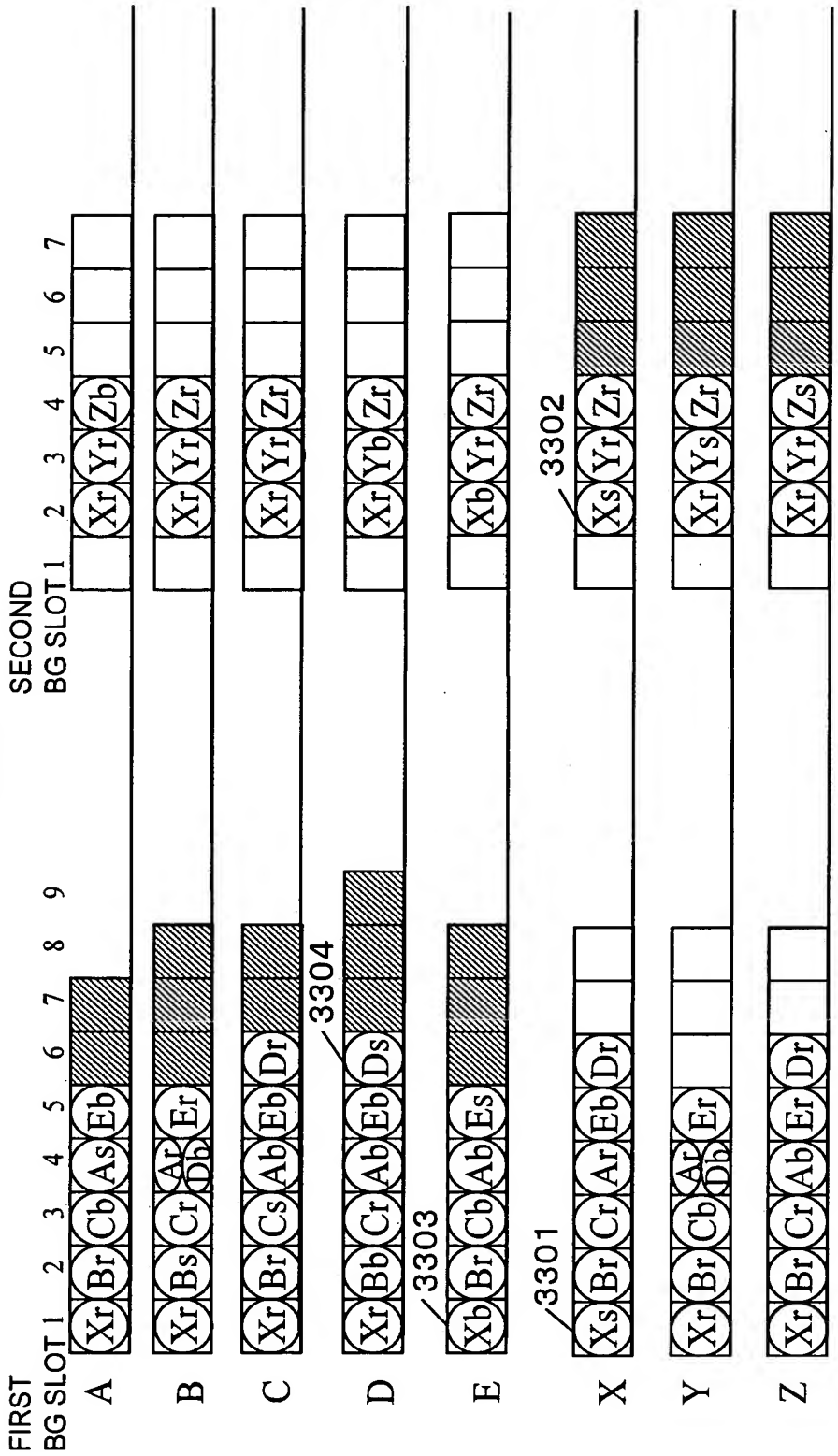

FIRST
BG SLOT 1 2 3 4 5 6 7 8 9
SECOND
BG SLOT 1 2 3 4 5 6 7
A
B
C
D
E
X
Y
Z
3301
3302
3303
3304

Fig.34

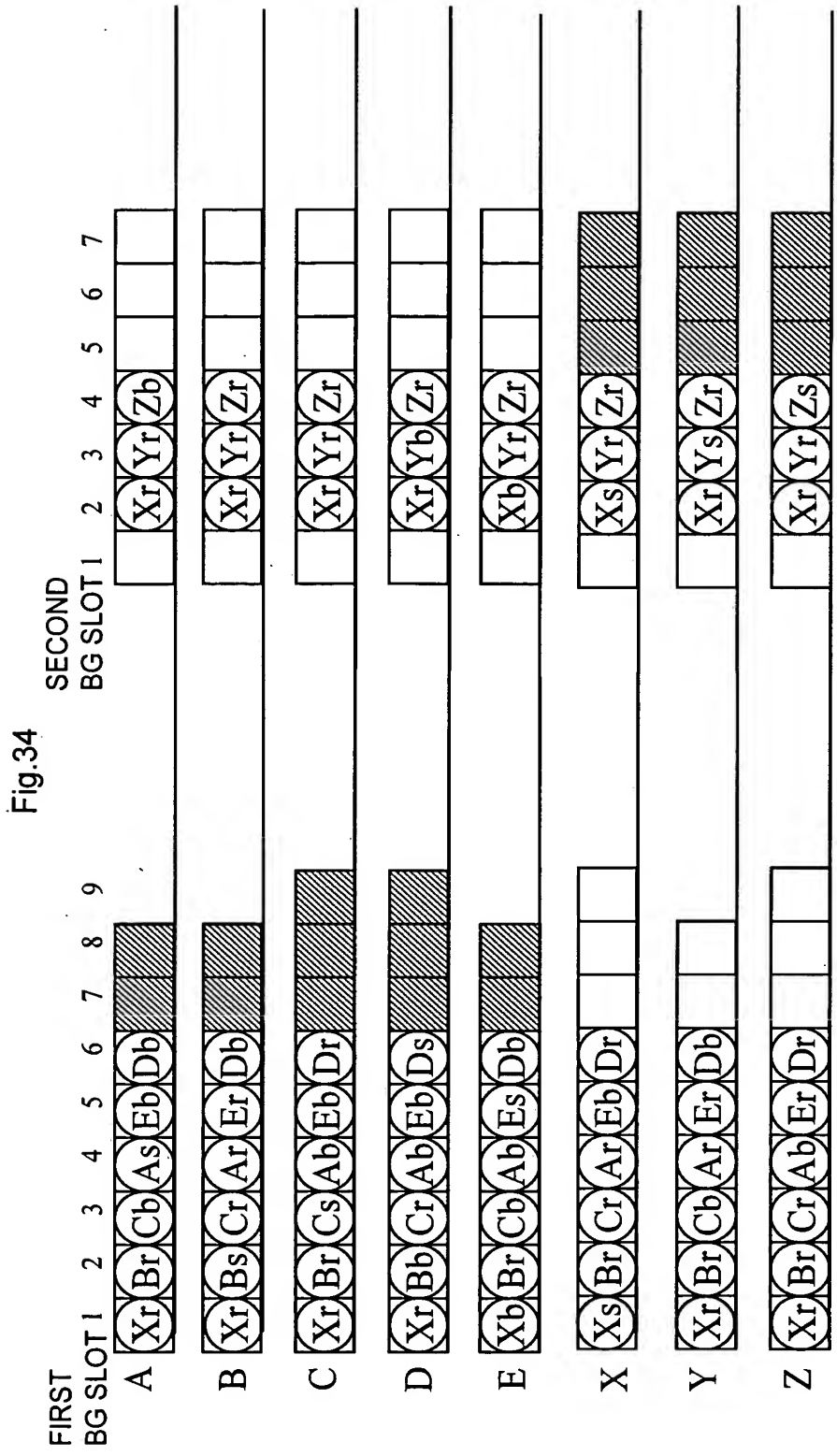

FIRST
BG SLOT 1 2 3 4 5 6 7 8 9
SECOND
BG SLOT 1 2 3 4 5 6 7
A Xr Br Cb As Eb Db Xr Yr Zb
B Xr Bs Cr Ar Er Db Xr Yr Zr
C Xr Br Cs Ab Eb Dr Xr Yr Zr
D Xr Bb Cr Ab Eb Ds Xr Yb Zr
E Xb Br Cb Ab Es Db Xb Yr Zr
X Xs Br Cr Ar Eb Dr Xs Yr Zr
Y Xr Br Cb Ar Er Db Xr Ys Zr
Z Xr Br Cr Ab Er Dr Xr Yr Zs

Fig.35

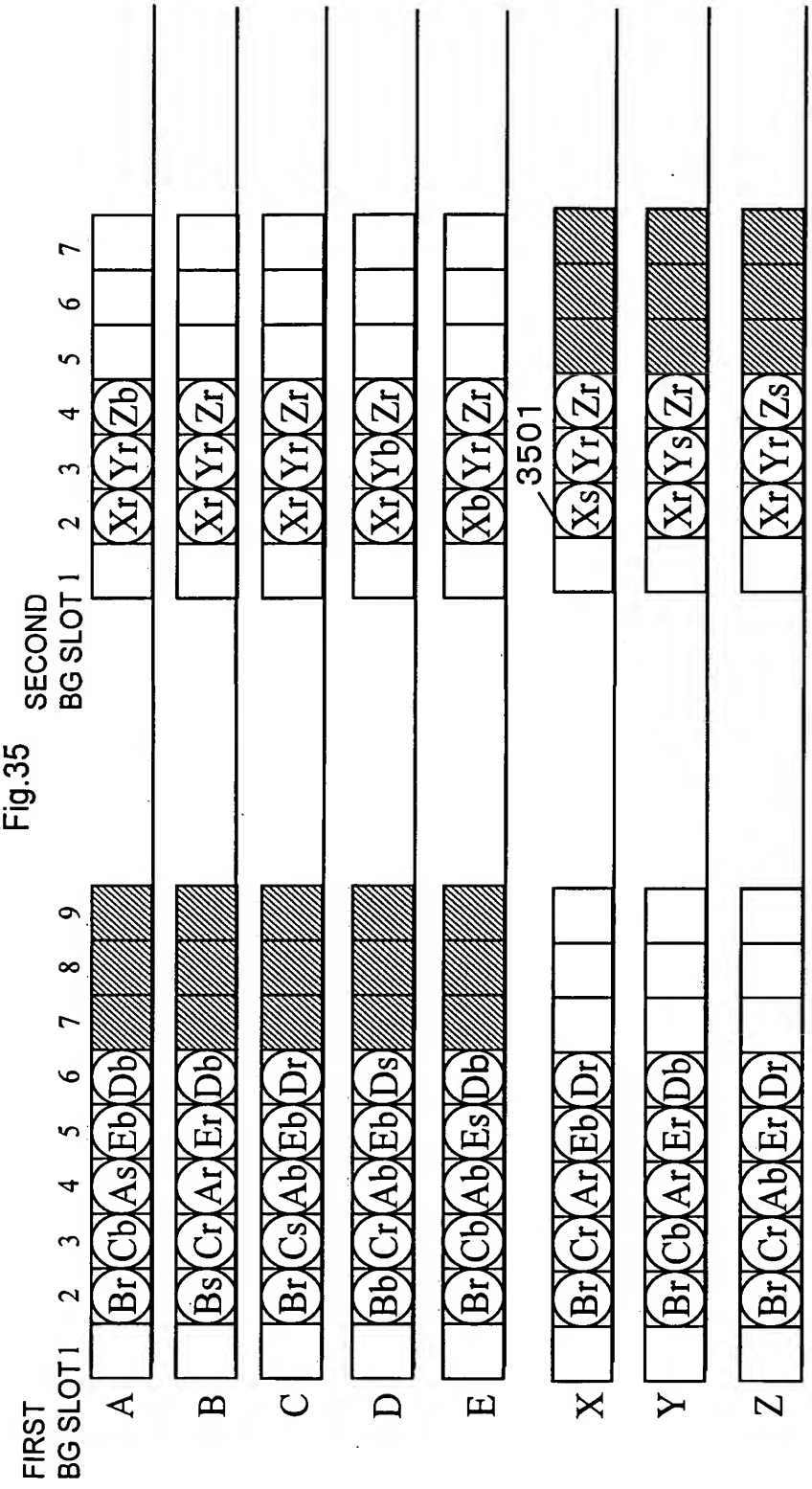

FIRST
BG SLOT 1 2 3 4 5 6 7 8 9
SECOND
BG SLOT 1 2 3 4 5 6 7
A Br Cb As Eb Db Xr Yr Zb
B Bs Cr Ar Er Db Xr Yr Zr
C Br Cs Ab Eb Dr Xr Yr Zr
D Bb Cr Ab Eb Ds Xr Yb Zr
E Br Cb Ab Es Db Xb Yr Zr
X Br Cr Ar Eb Dr Xs Yr Zr
Y Br Cb Ar Er Db Xr Ys Zr
Z Br Cr Ab Er Dr Xr Yr Zs
3501

Fig.36

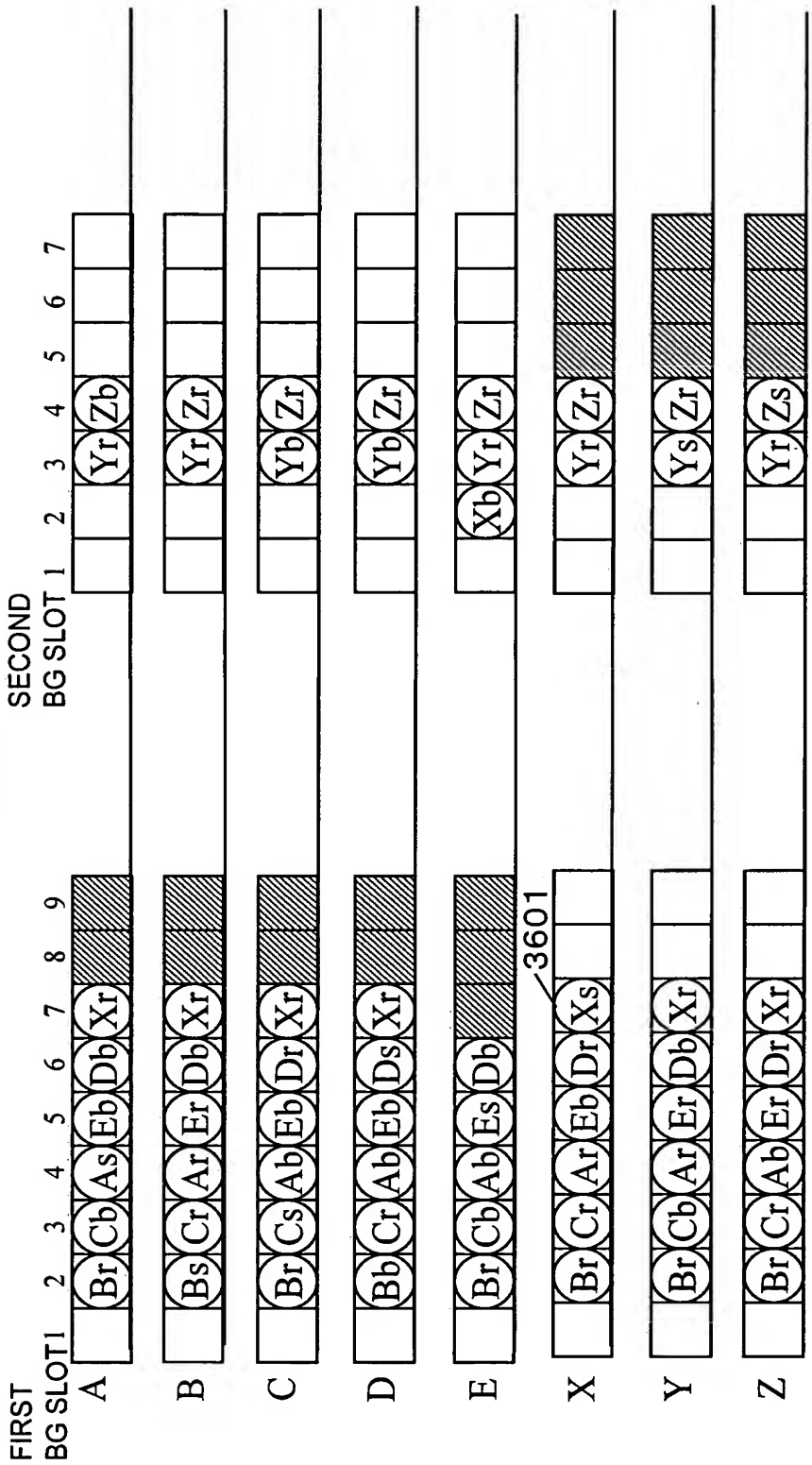

FIRST
BG SLOT 1 2 3 4 5 6 7 8 9
SECOND
BG SLOT 1 2 3 4 5 6 7
A Br Cb As Eb Db Xr Yr Zb
B Bs Cr Ar Er Db Xr Yr Zr
C Br Cs Ab Eb Dr Xr Yb Zr
D Bb Cr Ab Eb Ds Xr Yb Zr
E Br Cb Ab Es Db Xb Yr Zr
X Br Cr Ar Eb Dr Xs Yr Zr
Y Br Cb Ar Er Db Xr Ys Zr
Z Br Cr Ab Er Dr Xr Yr Zs
3601

Fig.37

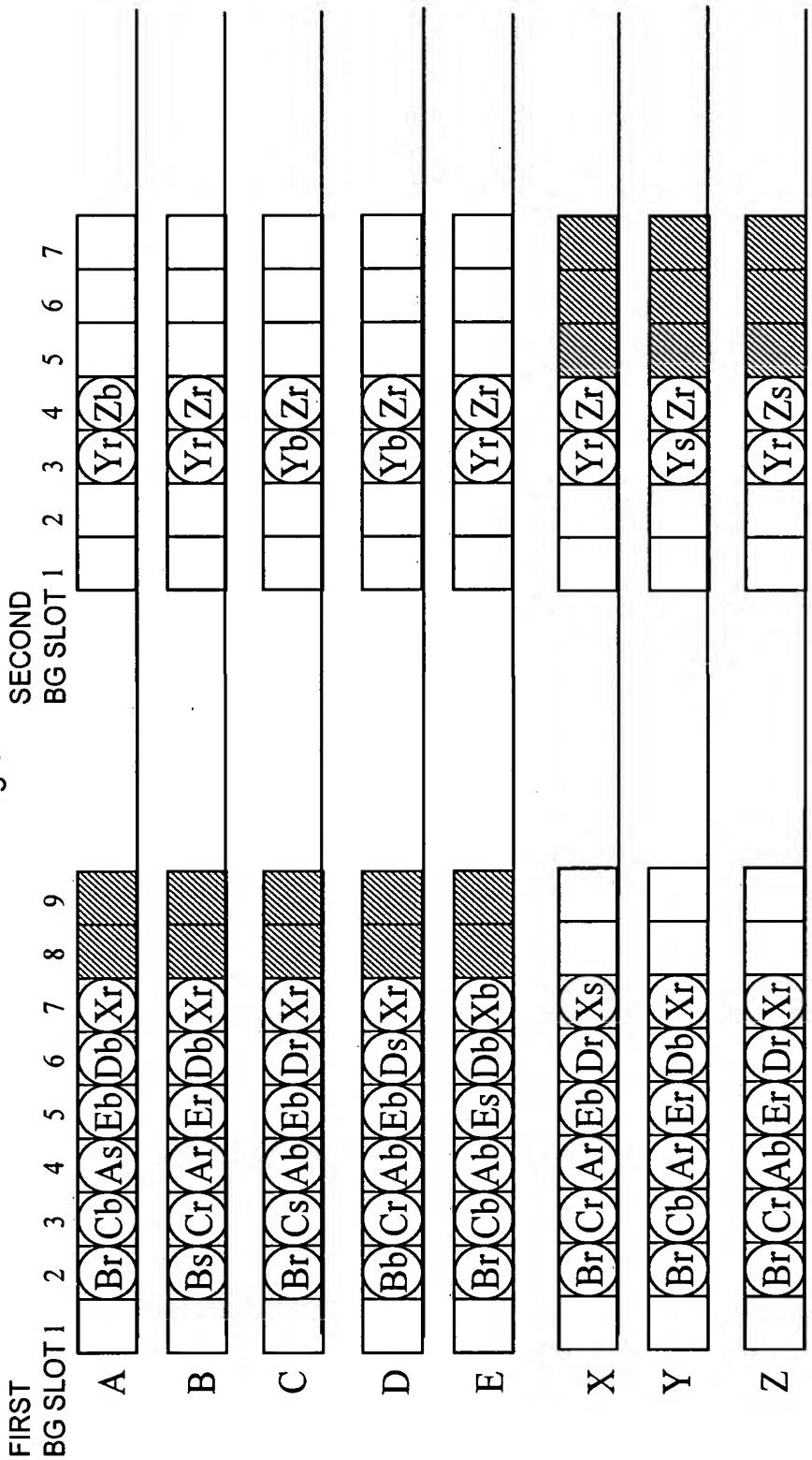

FIRST
BG SLOT 1 2 3 4 5 6 7 8 9
SECOND
BG SLOT 1 2 3 4 5 6 7
A Br Cb As Eb Db Xr Yr Zb
B Bs Cr Ar Er Db Xr Yr Zr
C Br Cs Ab Eb Dr Xr Yb Zr
D Bb Cr Ab Eb Ds Xr Yb Zr
E Br Cb Ab Es Db Xb Yr Zr
X Br Cr Ar Eb Dr Xs Yr Zr
Y Br Cb Ar Er Db Xr Ys Zr
Z Br Cr Ab Er Dr Xr Yr Zs

Fig.38

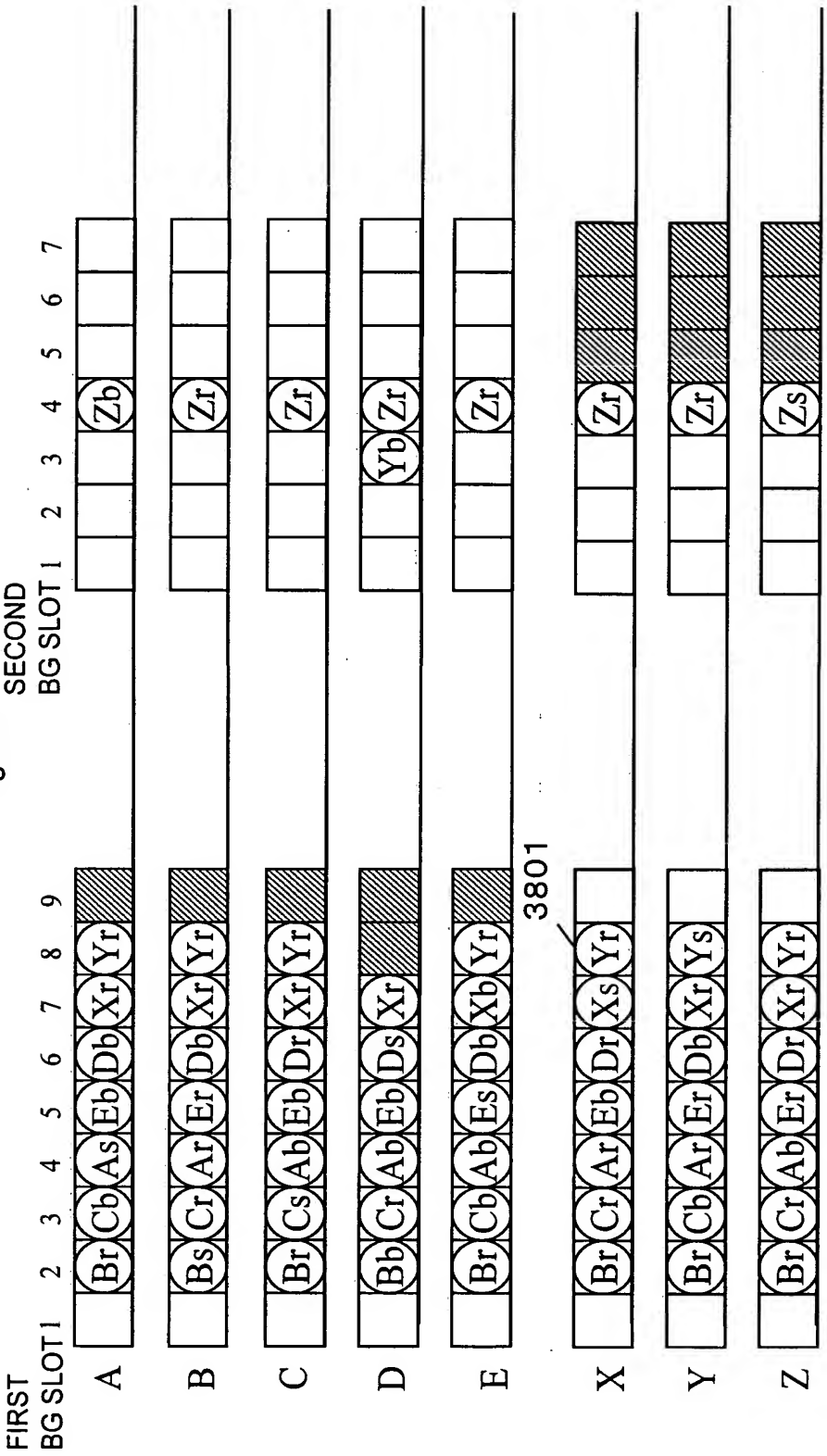

FIRST
BG SLOT 1 2 3 4 5 6 7 8 9
SECOND
BG SLOT 1 2 3 4 5 6 7
A
B
C
D
E
X
Y
Z
3801

Fig.39

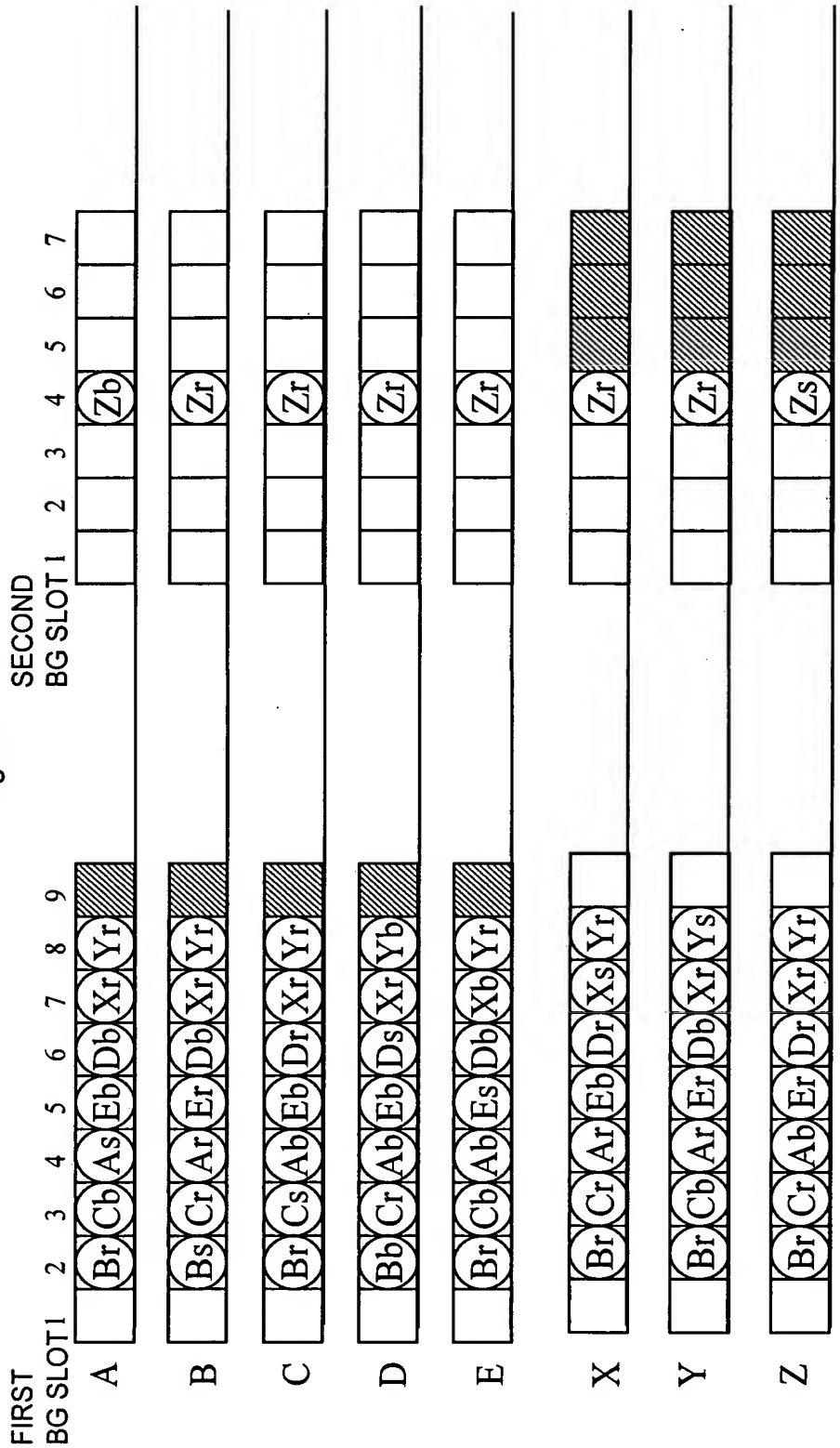

FIRST
BG SLOT 1 2 3 4 5 6 7 8 9
SECOND
BG SLOT 1 2 3 4 5 6 7
A
Br Cb As Eb Db Xr Yr
Zb
B
Bs Cr Ar Er Db Xr Yr
Zr
C
Br Cs Ab Eb Dr Xr Yr
Zr
D
Bb Cr Ab Eb Ds Xr Yb
Zr
E
Br Cb Ab Es Db Xb Yr
Zr
X
Br Cr Ar Eb Dr Xs Yr
Zr
Y
Br Cb Ar Er Db Xr Ys
Zr
Z
Br Cr Ab Er Dr Xr Yr
Zs

Fig.40

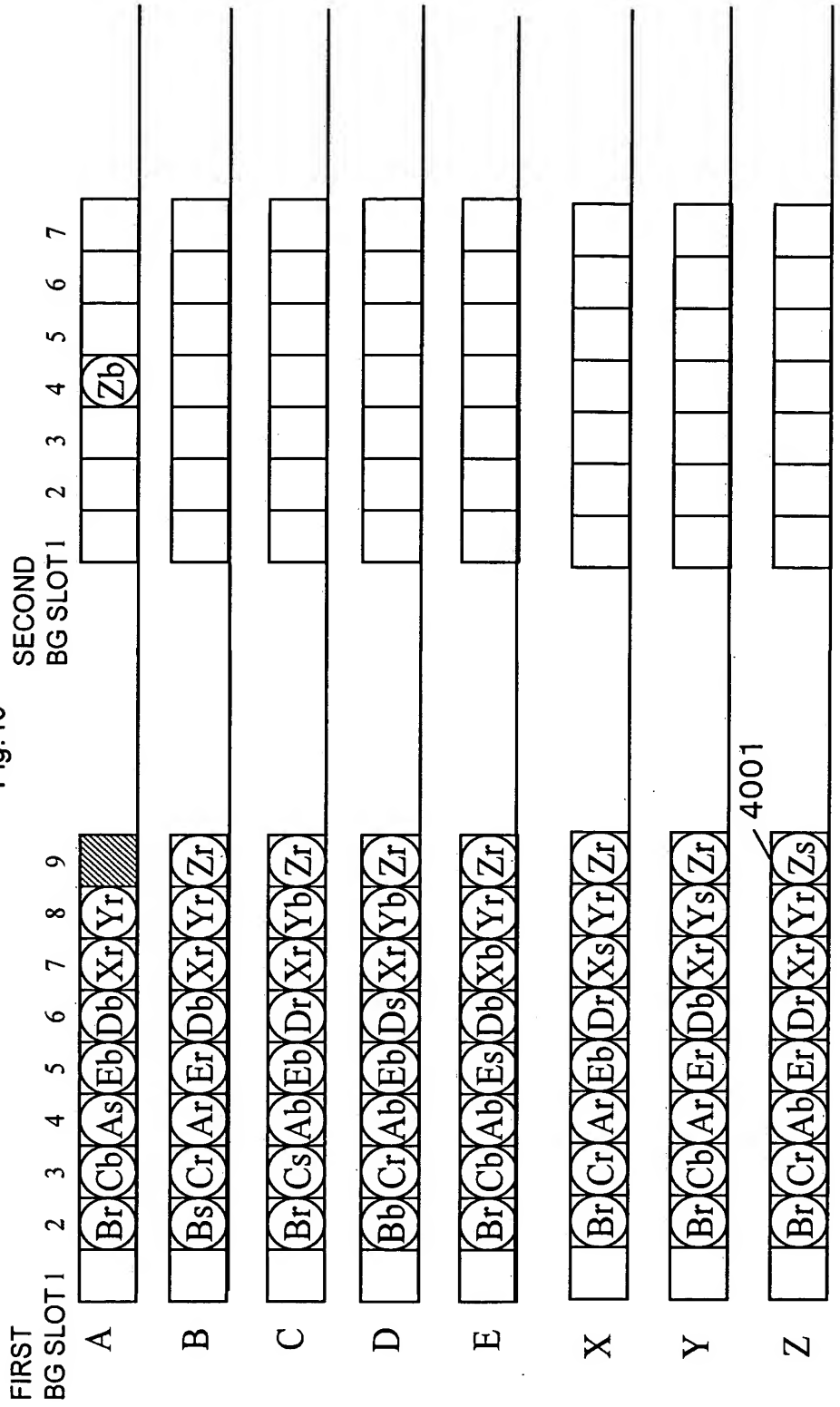

FIRST
BG SLOT 1 2 3 4 5 6 7 8 9
SECOND
BG SLOT 1 2 3 4 5 6 7
A
Br Cb As Eb Db Xr Yr
Zb
B
Bs Cr Ar Er Db Xr Yr Zr
C
Br Cs Ab Eb Dr Xr Yb Zr
D
Bb Cr Ab Eb Ds Xr Yb Zr
E
Br Cb Ab Es Db Xb Yr Zr
X
Br Cr Ar Eb Dr Xs Yr Zr
Y
Br Cb Ar Er Db Xr Ys Zr
Z
Br Cr Ab Er Dr Xr Yr Zs
4001

Fig.41

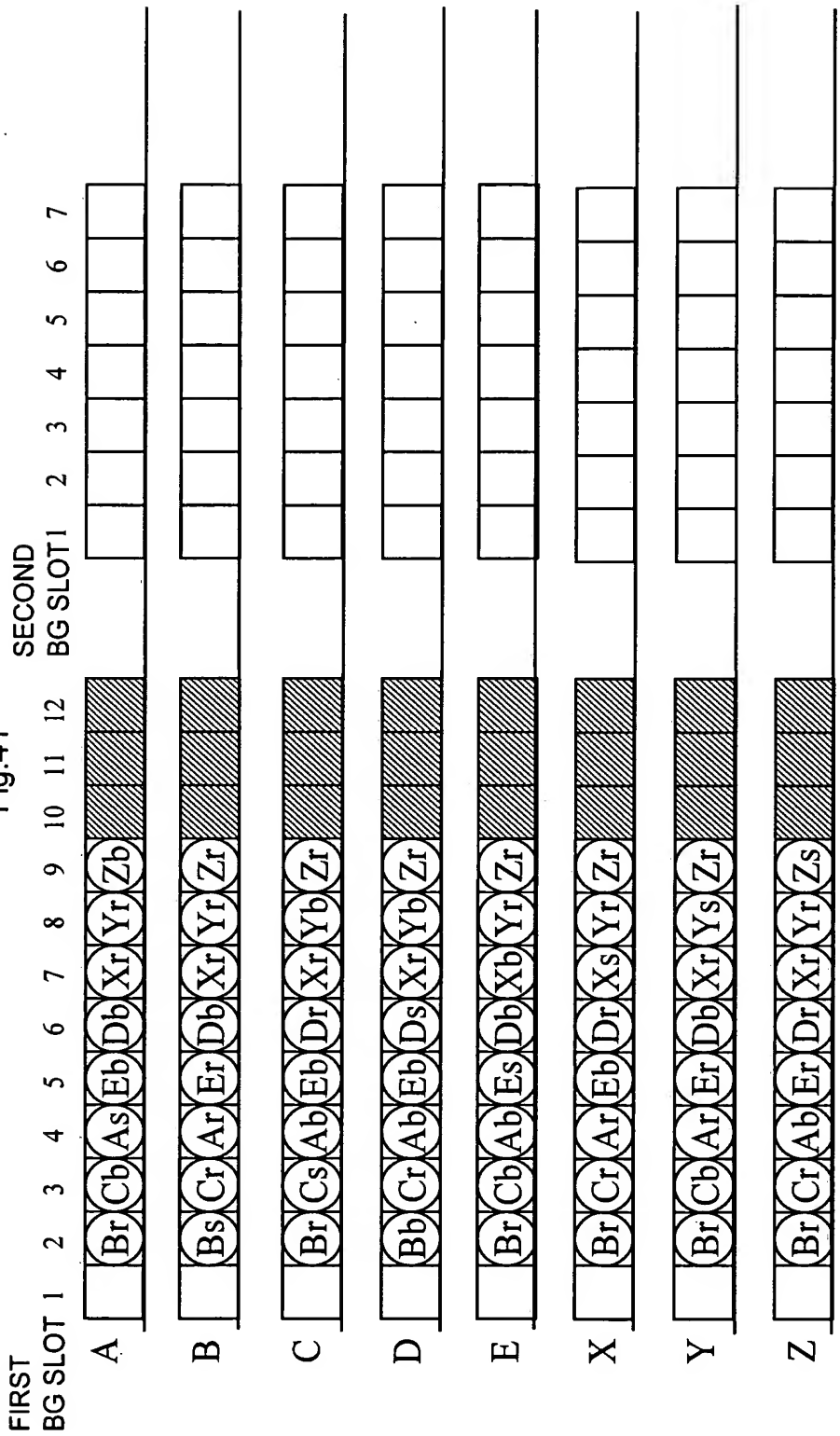
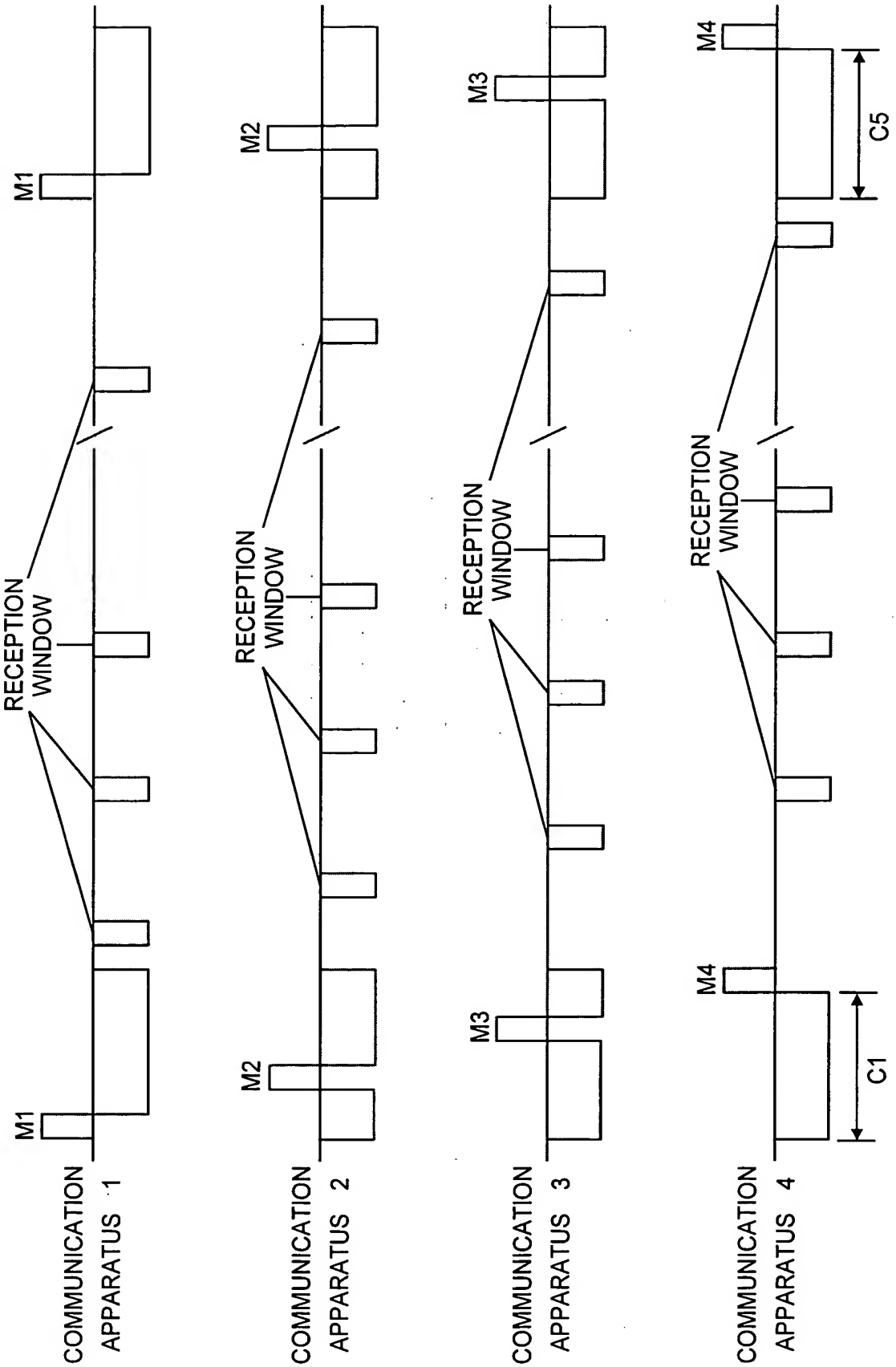

FIRST
BG SLOT 1 2 3 4 5 6 7 8 9 10 11 12
SECOND
BG SLOT1 2 3 4 5 6 7
A Br Cb As Eb Db Xr Yr Zb
B Bs Cr Ar Er Db Xr Yr Zr
C Br Cs Ab Eb Dr Xr Yb Zr
D Bb Cr Ab Eb Ds Xr Yb Zr
E Br Cb Ab Es Db Xb Yr Zr
X Br Cr Ar Eb Dr Xs Yr Zr
Y Br Cb Ar Er Db Xr Ys Zr
Z Br Cr Ab Er Dr Xr Yr Zs

Fig.42


COMMUNICATION APPARATUS 1
M1
M1
RECEPTION WINDOW
COMMUNICATION APPARATUS 2
M2
M2
RECEPTION WINDOW
COMMUNICATION APPARATUS 3
M3
M3
RECEPTION WINDOW
COMMUNICATION APPARATUS 4
M4
M4
RECEPTION WINDOW
C1
C5